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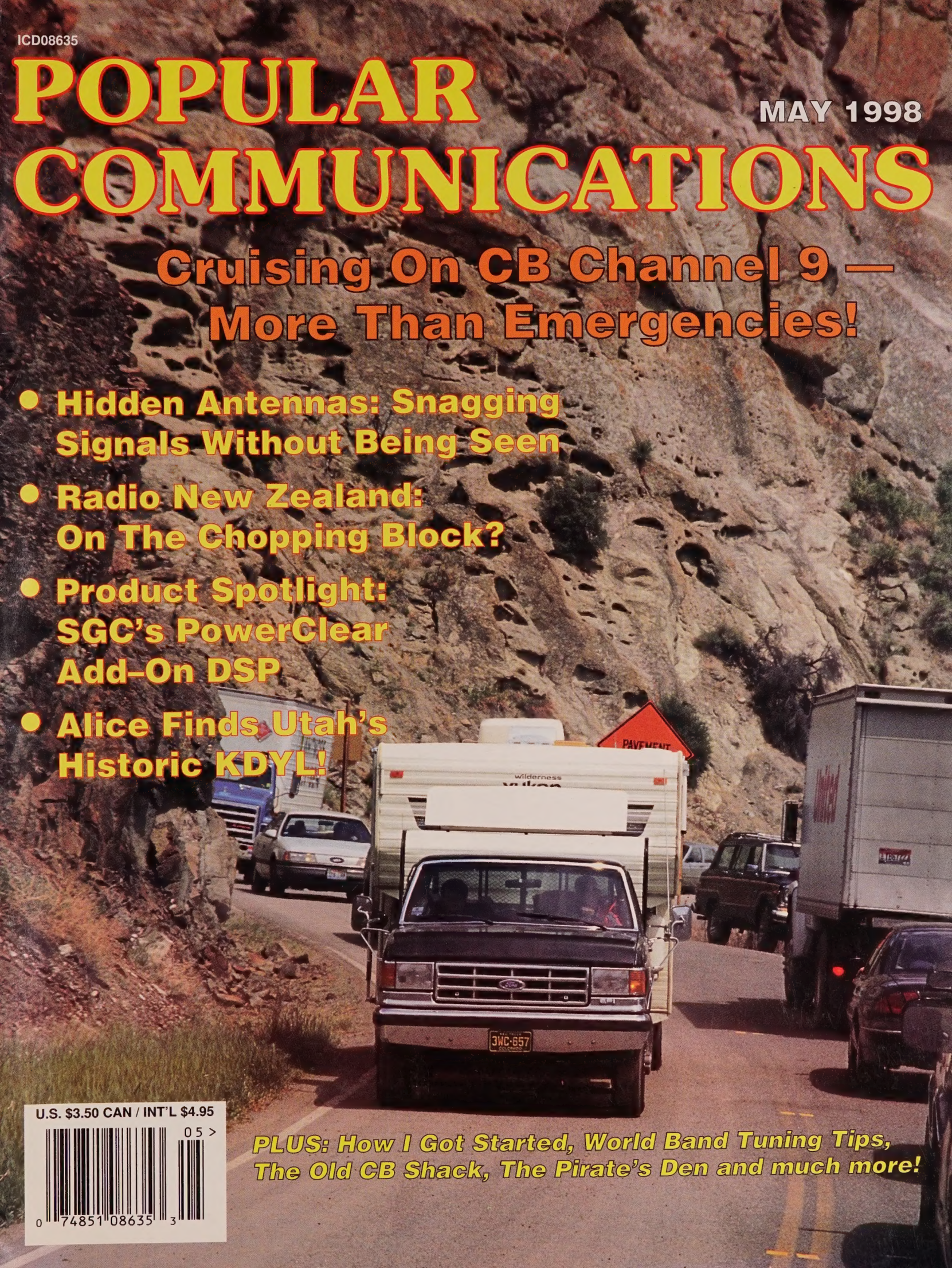

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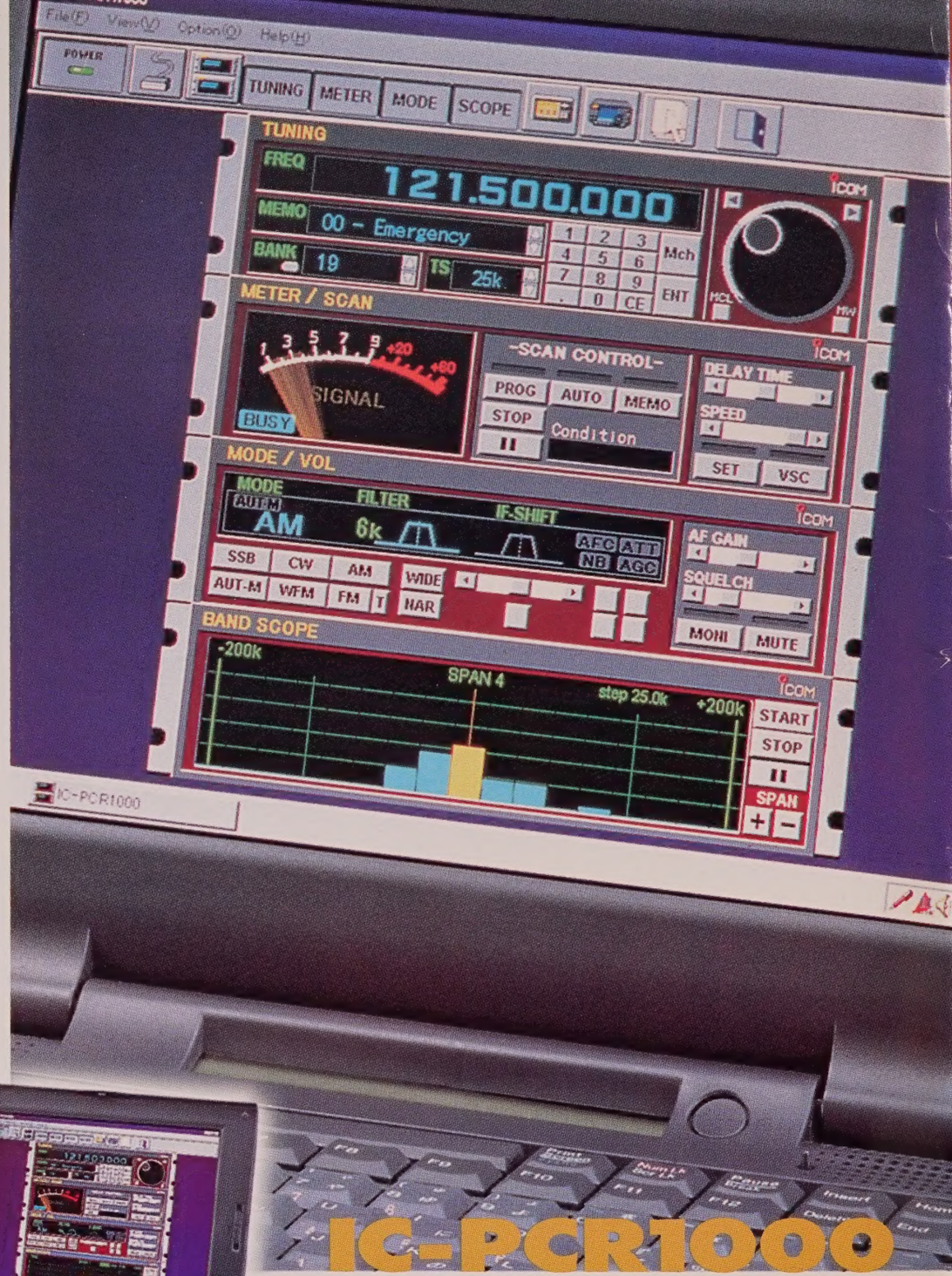

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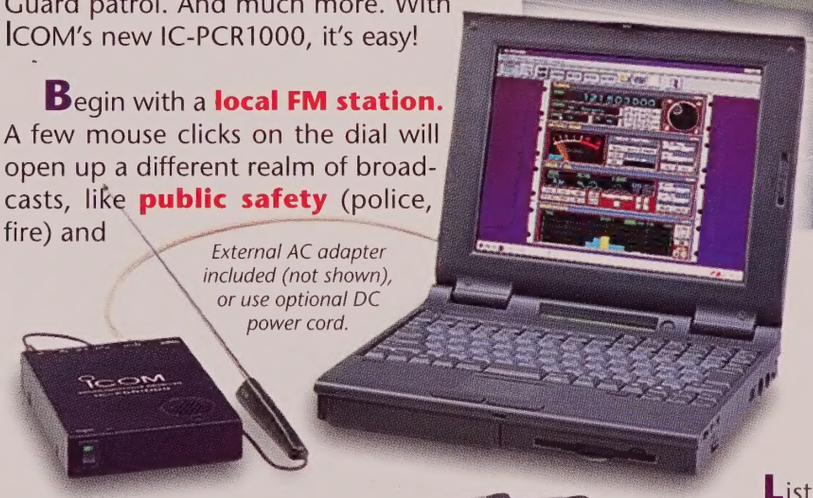

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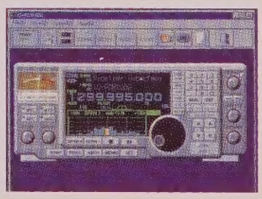

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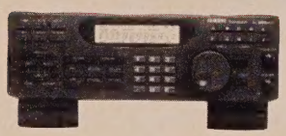

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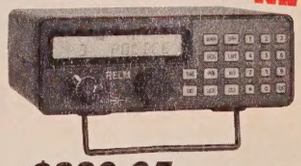

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POPULAR COMMUNICATIONS

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ON THE COVER: *These CB-equipped campers on the road in Idaho* can *use CB Channel 9 for traveler's assistance as well as emergencies. Read this month's "CB Scene" on page 48. (Photo by Larry Mulvehill)*

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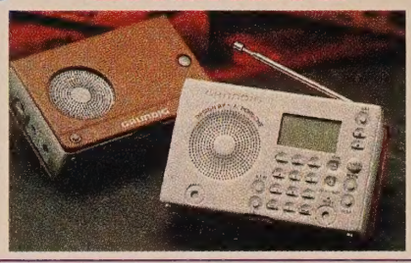
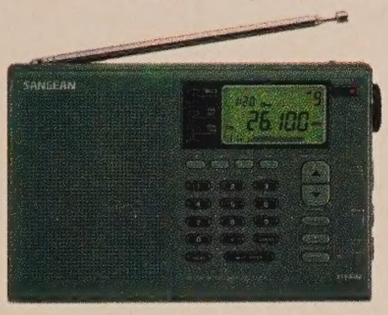


SANGEAN

ATS-808A



Smart styling, compact size and great performance combine to make the Sangean ATS-808A a favorite. Coverage includes LW, MW, all SW and FM (stereo to headphone jack). Five tuning methods: keypad entry, auto scan, manual scan, memory recall and manual two-speed rotary tuning. The attractive tricolored LCD display shows: frequency to 1 kHz, signal strength, memory status, dual UTC-local clock and band. A wide-narrow selectivity switch really helps in the crowded shortwave bands. Other features include: high-low tone control, wide-narrow switch, local-DX switch, external antenna jack (mini), 54 memories (18 for SW) and dial lock. Includes stereo earphones and case. 7∫" x 4˚" x 1˚" 2 Lbs. Requires 6 AA cells (not supplied) or optional ADP-808 AC adapter (*#1665* $8.95). At under $100, this is clearly the best value in a digital full coverage shortwave portable if you don't need SSB. Special sale price valid to 5/15/98.

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Tuning In

AN EDITORIAL

BY HAROLD ORT, N2RLL, SSB-596

The Business Of Hamfests

This month, I hope to be at the Mother-Of-All-Hamfests, the Dayton Hamvention '98, from May 15 to 17 at the Hara Arena. If you've never been to this hamfest, you're missing out on the time of your life. This three-day event draws folks from all over North America — indeed, from all over the world! Even for someone like me who doesn't do shopping malls, I definitely think Dayton is something else.

Truth is, I like hamfests; whether I'm there representing CQ Communications, Inc., or just browsing on my own. It's a chance to meet our readers and talk about the hobby, buy a few more antennas and an assortment of goodies I don't really need, and get ideas to make my radio life more enjoyable and fun. Where else can you find everything radio you want under one roof? It sure makes shopping for radio equipment easy, doesn't it? Talk about shopping till you drop!

To be sure, hamfests are a business — maybe not the thriving, busting-at-the-seams business they were several years ago, but they're still a business in the true sense of the word. The idea is to make money. And aside from the tailgating (no, not what those New York drivers routinely do on the expressway!) where you can usually buy just about anything from vendors at a pretty reasonable price — things like connectors, coax, old radios, old books, records, tapes, wire, nails . . . you name it, it's available in the tailgating area of hamfests — the bottom line is that it costs money to put on a hamfest.

It doesn't matter if we're talking about the Dayton Hamvention or the small "you-can-see-every-table-from-the-entrance" hamfest, there's the cost of renting the hall or arena, the cost of security, and everything else that goes into the equation. These inherent "hidden" costs must be addressed at every hamfest, nationwide!

Typically, you can expect to spend from a couple of dollars up to about $5 or $6 for admission to most hamfests. The Virginia Beach (VA) Hamfest and Computer Fair, from September 19 to 20, is my personal favorite. That doesn't mean I wouldn't enjoy countless others, it's just that Virginia Beach is relatively close to home and the folks that run the show are a great bunch of hams. Tickets are $5 advanced purchase and $6 at the door. In this day and age when you'll frequently spend $5 for a quickie meal at a fast-food chain, I don't think $5 or $6, or even a bit more, is much to ask! But, for those folks who grumble about the admission costs, possibly thinking those ham-volunteers' organizations putting on the shows are getting rich, let's take a look at the facts.

> ***"The bottom line is that it costs money to put on a hamfest."***

Let's take the Virginia Beach hamfest as an example. Our friend and hamfest guru, Lew Steingold, W4BLO, tells us, "Sure, participation has fallen off in recent years at most hamfests nationwide . . . we typically see 4,000 to 5,000 people during our two-day event . . . those entrance and dealer fees pay for facilities and the overhead of putting on the show . . . you can't put on one for nothing!"

He's right, you know — you can't put on a show for nothing. And some of the profit goes into scholarships, prizes, and even back into the ham community. Now I haven't sat down with any club or organization and looked at every nickel and dime they bring in from their hamfest, but you can bet your NiCds the profits aren't sending the organizer on a round-the-world cruise! Matter of fact, many don't even break even after paying expenses that include those things no one thinks about, such as janitorial services, 24-hour security, and more! Many, in fact, actually *lose* money, but these good, hard-working volunteers put on the shows year after year because they know the value of keeping ham radio events within arm's reach of the general public. But we've got to do more, if ham radio in any form is to move proudly forward into the next millennium; promote, promote, and promote!

(Continued on page 74)

POPULAR COMMUNICATIONS

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A Modest Proposal

Dear Editor:

I have always heard that fools rush in where angels fear to tread, but no one ever accused me of being overly bright. Accordingly, I would like to offer a few thoughts on the amateur code/no-code controversy.

First, I should like to address a couple of the points made by KC7JUZ (*Pop' Comm* P.O. August). In the first place, the main thing pilots have in common with radio operators is that both can be hurt or killed if improperly trained. Also, whatever one may think of the code requirement, it is imposed by neither the ARRL nor the FCC, but is rather a result of our participation in the ITU (International Telegraphic Union), under the auspices of the United Nations. ITU rules state that anyone testing for a broadcast license below 30 MHz must demonstrate proficiency in Morse code.

Finally, as a proud holder of an Extra class license, may I offer a modest proposal? While our treaty obligations mandate a code requirement, I see no reason why that requirement could not be met by the retention of the basic five-wpm Novice-level exam, with additional theory questions substituting for the General and Extra class code exams. Those who fear an overall drop in CW activity should think for a moment. The true code aficionado (and there are many) operates because he enjoys it, not because he is coerced or browbeaten, and no alteration of the code requirement will change that.

Having said all this, I wish to state that there is absolutely no excuse for the rude, ignorant, and downright discriminatory behavior that is described in the August editorial. Remember, folks, one of the primary purposes for the amateur radio service is to foster good will. Whatever the final outcome, I would hope and pray that we hams will remember why we joined the amateur hobby in the first place and retain our civility.

Sincerely,

Ted Lisle, KD4EXK

The Feds Giveth And The Feds Taketh Away!

Dear Editor:

I have several things I would like to touch on, all related to CB radio. First off, kudos on an excellent magazine. We met at the Tampa Hamfest, and at the time you had said you wanted stories for the *CB Radio* magazine, which I miss very much! It took me a while to get up the guts to think about it and actually come up with loosely written articles. We had spoken about my REACT experience and the fact that I had an Aunt who was married over the CB radio. If you are still interested in this, I would be willing to submit something for your approval.

I have been a CBer since the early 1970s. I had the call sign of KHY-7554, and before that, I operated under my Dad's call sign. I consider myself a "purist" when it comes to CB Radio; I don't care for linears, echoes, or any of those "toys." I want to put out the best signal I can using what I can legally have. The only rule I would like to see the FCC change is the distance limitation. I believe this would be a boost to CB and start a QSL craze. By making it legal, there would be no fear of the slim chance of getting caught by the FCC. With the use of the computer, a CB QSL Bureau could be formed. I know if I want to talk long distance [I have to] become a ham. It's not my fault the FCC put the CB band in such a good place. I would like to just be able to take advantage of it.

For those hams who think they are so high and mighty, how about this? I can't recall ham radio having influenced a generation and made its own culture. CB had its own language, music, movies (as bad as some of them were), TV shows, clothing, millions of books and many other things. My father and I enjoyed the CB together, and I have made many friends with the CB. It was something available to the common man that allowed everyone to be a little closer. CBers were, and are, some of the nicest people I have ever met. CBers represent the melting pot that is our Nation and the World.

I do have one problem with the position of your magazine. I do not feel that freebanding has any place in taking up the monthly CB section. Although freebanding may have been an offshoot of CB, it is now so mixed with hams and CBers, it may deserve its own section or special articles.

In the September issue, which was excellent, I was dismayed by what I read. I am in total agreement that there needs to be more enforcement in the CB band, but not from the local and state governments. When I first heard of this proposed bill I thought, here we go again. The Feds have a habit lately of mandating all manner of things to the local and state level without providing funds. I then looked at the bill in the latest issue and saw a possible out for the local and state levels. On line 2 of section (f)(1) of the bill, it says the governments "may" enforce the following regulations. It is not stating that they are required to adapt Legislation to enforce any of this. As a deputy sheriff, I do not have the time to handle this type of complaint. Although I do know about radios, how many law enforcement types do? So then we have to look at the possibility of forming a state or local agency to handle this problem. Great, more bureaucracy and wasted money.

I also have a problem with the FCC overseeing this, because the person cited can appeal to the FCC. I see this bill as a statement saying that the FCC is unable or unwilling to do its job. I think it is probably a matter of being unable due to a lack of funds. I would think there would/should be a requirement to first ensure that the complainants' equipment

is in proper compliance with Part 15 before jumping to the instant conclusion that the CBer is automatically wrong.

I plan on contacting my local, state, and federal representatives and also encouraging my fellow CBers to do this on the radio and on the Web.

Thank you for your time. Keep up the great work. This is one CB enthusiast who is 100 percent behind you.

73s

David McCuen
KHY-7554
American Eagle
Indian Rocks Beach, FL

Dear David:

You're certainly welcome to send along your story. We'd like to begin using readers' submissions from time to time; whether we use them as short articles in Pop'Comm *or send them along to our various columnists, this is your magazine and we depend on reader input with articles, loggings, photos and ideas.*

Your comment, "it's not my fault the FCC put the CB band in such a good place" should have been printed on T-shirts back in the '60s!

Florida To New York TV DX

Dear Editor:

I enjoyed the recent article on TV DXing. There are so many stations on the air now. And here in San Diego practically everyone has cable, either because of poor off-air reception, neighborhood rules that prohibit antennas, or to get all those wonderful extra channels.

A few years ago, we had just driven up to our summer home on 4th Lake, Old Forge, New York. Picture this: We're at the bottom of a mountainside right on the water. Most of the time we get about three channels from Utica and Syracuse off-air; people on other parts of the lakes not under the mountain do a bit better. So this particular day we turned on the old B&W and in comes this station from Florida. I'd been DXing AM and SW, but never thought about TV skip. As you can see, a note to the station did result in this somewhat informal, but official, QSL.

I've been meaning to send this for a few weeks but had to dig it out of the garage. Again, keep up the good work.

Doug Meyer
San Diego, CA

Dear Doug:

Of course I'm partial toward that area of the country, having grown up near the Adirondacks in Gloversville. I'll bet Old Forge would still be a great place for some fantastic DX — AM, FM, SW and even TV — minus all the urban static and man-made noise! Thanks for your comments and for sending along the QSL.

Duty, Honor, And The Cellular Industry

Dear Editor:

Can this Boy Scout be jailed for what he did? Both he and I live within 500 feet of not only a cell tower, but a 150- and 900-MHz tower site. The Scout, wanting to make some sort of radio work his lifetime job, has built several radio receivers.

Now it came to his attention that the local TV Ch. 59 had a lot of *Star Trek* programs that he enjoyed. Could he build a radio that would receive the sound of TV 59? With the help of an *ARRL Handbook* and learning a lot of math and some old TV tuner parts, he came up with something that might (he hoped) work. It did, sort of.

The salvaged tuner got messed up pulling it out of the TV, and would only tune between about Ch. 62 and 63 and old Ch. 82 or 83. Guess what he heard? That cell tower traffic swamped his receiver. It even wiped out TV 69.

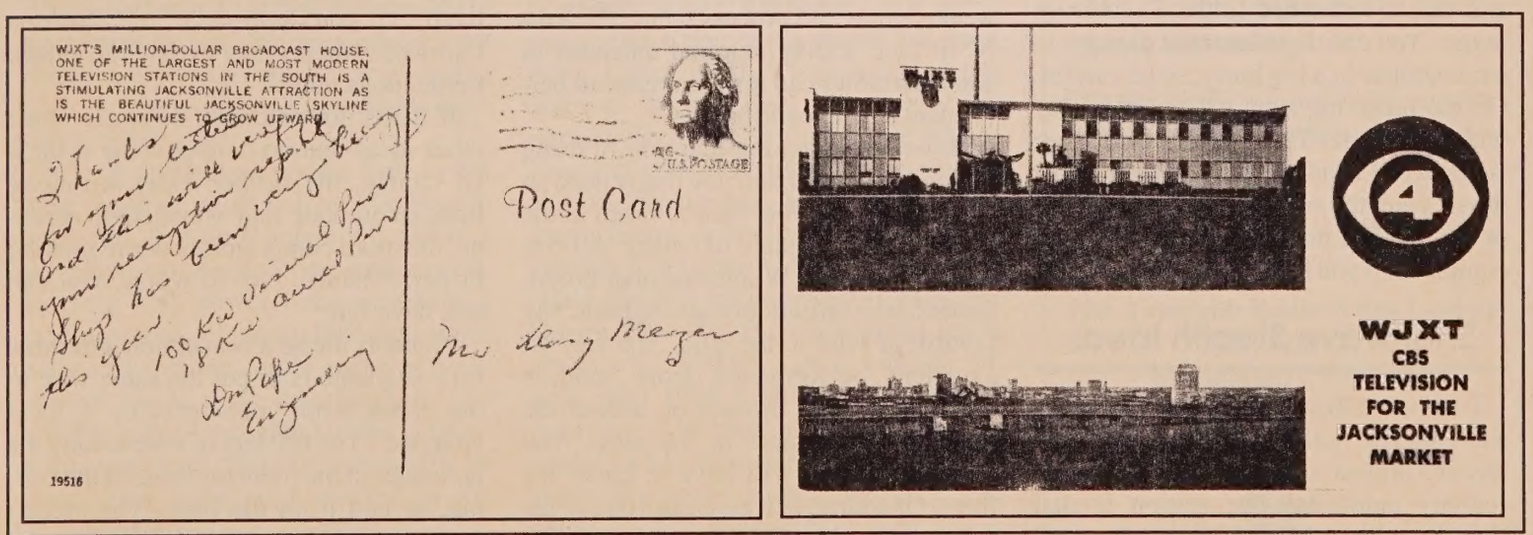
The local PD thought it was funny, but I don't know what the cell phone people would think about it, so I ask you not to use my name or address.

On another note, the FRS units sold by RadioShack in our area do good to get out 1 1/2 miles. But their handheld CB is always good for at least five miles; to get more distance it's hooked up to a whip antenna mounted on the tractor. It's noisy, but it does work better than the FRS.

Name Withheld By Request
Indiana

Dear Name Withheld:

I'll bet the cellular folks would think it was pretty funny too, but judging from their dry sense of humor, they might not get the belly laugh I did! I'd also bet that unless this Boy Scout you know puts a carrying strap on the radio or bungee-cords the contraption to his car seat, or pushes it around town in a shopping cart, no one will care. It's what we've been saying all along about old TVs tuning in the cell frequencies; how does the government go about arresting a Boy Scout for doing a radio project and learning something in the process? Sounds like he'd be a great ham! ■



Doug Meyer's QSL from WJXT.

Hidden Antennas

Out Of sight. Out Of mind. Not Out Of luck.

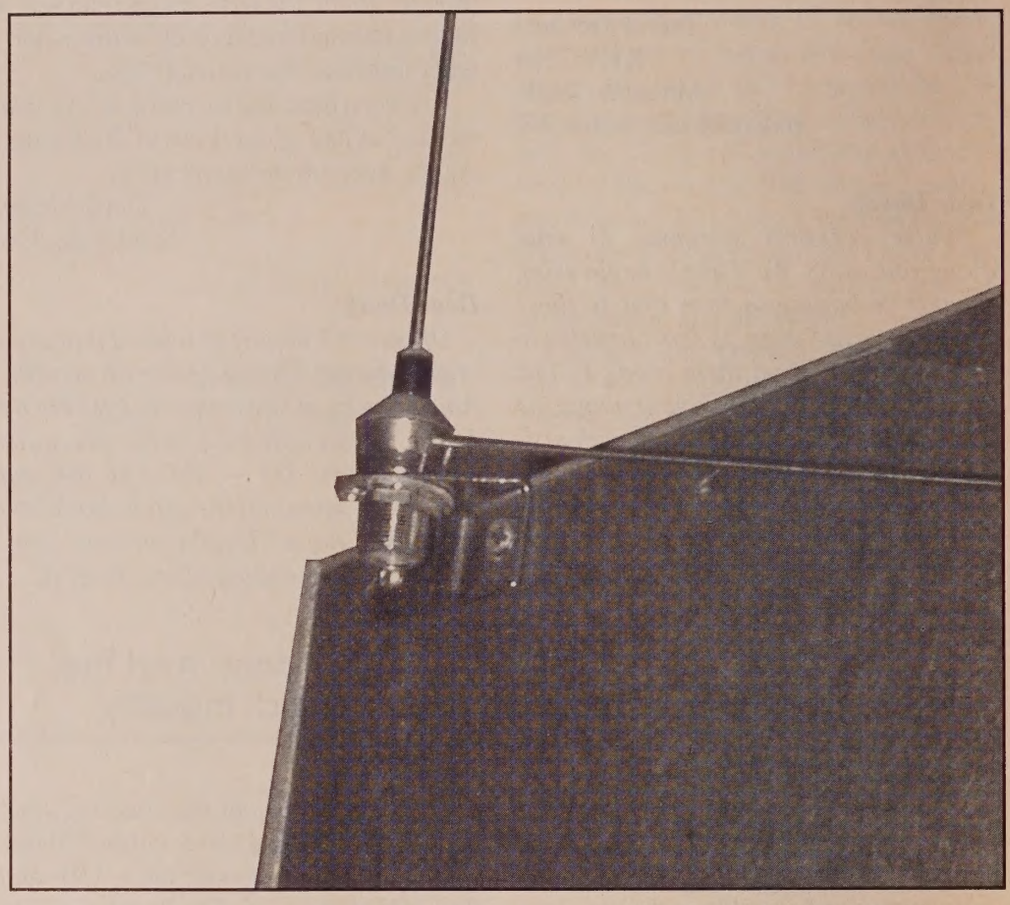
By Ken Reiss

Finding a place for antennas is easy if you live out in the country. Just string a wire up between two trees, or run some coax out to the tree and nail up a ground plane. But for those in the city, even if you have a house, outdoor antennas aren't always possible or desirable.

Of course, the ideal performer is an outdoor antenna up as high as you can get it, and tuned specifically for the frequencies you are interested in receiving. But reality usually demands something else, so we all live with compromise. Just how much do you have to compromise?

Let's look first at some shortwave antennas and, later, at scanner antennas, that can be used in a limited space/visibility environment, but still allow us to enjoy the hobby. Before we do that, however, it is worth noting that not all of these ideas are going to perform well for everyone. For instance, if you're on the ground floor of a 30-story apartment building made from steel-reinforced concrete, you've got a much bigger problem than someone in a single family home with wood siding and just a few neighborhood restrictions to worry about.

It's also worth pointing out that we are talking about *receiving* antennas here. Much of the information also applies to transmitting antennas, but if you intend to transmit through an antenna, you have to be careful that it can handle the power and that it's matched to the frequencies in use. You can do substantial damage to a transmitter in a big hurry, so be careful. On the receiving side, we can get away with a lot more. The absolute worst case is that we'll wind up with an antenna that doesn't pull the signal that we're after out of the air. But no harm can come to the equipment if you follow basic safety rules.



Antennas mounted on the back of a bookcase either right side up or upside down can provide an easy way to hide a fairly functional antenna. You can also make wire antennas and tack them back here.

Shortwave Stealth Ideas

It turns out that, unless you're in a steel and concrete building, shortwave antennas are almost easier to deal with than scanner antennas. The reason is that shortwave signals are arriving from all angles, and most shortwave receivers of any caliber are designed to receive the weak signals and process them efficiently. In fact, adding external antennas to some portables can result in reduced performance from overloading.

However, assuming that you're using a desktop receiver and you really need an antenna, or that you want to listen to the much weaker signals of utility stations rather than 250-kW international broadcasters, let's talk about some options. My favorite is wire in the attic. You can get excellent performance from random length wire just thrown or tacked the length of the house in the attic. And nobody but you will have to know it's there. Of course, that assumes you can get to the attic. Also, watch out for any electrical lines that may be up there. You not only don't want to come in contact with them, but you don't want your antenna too close to them either as they can induce tremendous noise.

If that's not practical, there are some other ideas that do deliver some results. Of course, the further away we move from an outdoor, half-wavelength antenna, the more compromises we're making in performance. Not to worry, you can still have fun.

Probably the next best option if the attic isn't available is to put the same wire in the room with your receiver. I have wrapped 75 or 100 feet of wire around the perimeter of the room on hooks at the ceiling, or laid it on the floor. The ceiling approach works better, but the floor did

This is a complete receiving station made by Yaesu some time back, but it's still available on the used market. Note that active antenna visible on the right. With this system alone or another active antenna, you can spend many hours listening to shortwave.

offer some results too, and was a bit easier to hide. You can also use very thin wire for this and go around the entire apartment if your spouse is willing, or you can do it when nobody's watching and hope for the best. Of course, if you're single, or your significant other is involved in radio too, then there's no limit on bad taste.

I have also heard of people lowering wires out of windows (multi-story buildings, obviously) only during the time that they are using the receiver. If you have a spot that you can do this safely, by all means, give it a try. If you're in one of those steel and concrete buildings we mentioned earlier, you'll have to find a way to get wire *outside* to get any kind of performance. Putting a small weight at the end of the wire can help to pull it down, keeping it stable in wind, but be careful it's not whipping around so much that it's going to go through someone's window three stories below you.

Now is probably a good a time to put in the required safety notice: You have to make sure that your antenna is put in a safe place, no matter where you erect it. Tangling with power lines outside is a good way to spoil your whole day, and it really reduces the resale value of your receiver. Inside, make sure that there is no possible way of crossing electrical lines, or that you don't drill into the electric or some other household service in the process of installing a hidden antenna. Don't connect to a gas line thinking it's the cold water pipe. Think before you act so that you can continue to enjoy this hobby for a long time. If you're not sure, don't drill, cut, or hammer. Safety first!

If you can't do wires, there are still a couple of other options for shortwave reception. Active antennas are actually quite good. While probably not a complete replacement for outdoor wires, they can still be quite usable if your situation demands it. I have logged many stations with an active antenna.

We simply don't have room here to present the pros and cons of various models of active antennas. However, I can tell you that, in general, you'll get what you pay for. And I can also tell you that putting an amplified antenna in front of most portables is not advisable, although I have seen a few cases where it helped. Sony's new ANLP-1 portable active antenna is intended specifically for portable receivers. It's a flexible folding loop that's about 19 inches when opened and fits into the supplied carrying pouch for traveling. A suction cup mounts the antenna to a window. It's available from many retailers for under $100. MFJ also has its MFJ-1020B indoor tuned active antenna for $79.95 and an outdoor 54-inch, MFJ-1024 for $129.95. Talk with someone who has used a particular model, or buy from a dealer with a favorable return policy, such as MFJ, if you're going to experiment with actives.

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Here's an instant antenna system. The spool of wire can be uncoiled for listening, then re-wound for storage. It will perform even if the wire isn't unspooled all the way, but of course best performance will be obtained if it can be stretched out and run outside.

Here's a scanner with a particularly portable antenna adapted to fit the rear antenna connector. This antenna is slightly tunable by raising or lowering the sections as required, but is recommended for VHF listening. It works great on the local action!

tioning for shortwave listeners is the loop. Low band and AM broadcast band listeners have long been aware of the advantages of loops, both to peak the signal they're after and to null out noise that may be generated locally. Recently, some loops have become available that support the shortwave frequencies. And a few designs combine a loop with an active amplifier for very nice results.

Stealth Scanning

Scanner antennas tend to be a bit smaller and, it would seem, a lot easier to hide. While that's true, scanners are also subject to line-of-sight communications, so if your antenna is stuck inside, especially on a lower floor, you may be severely limiting your range. If you're in a metropolitan area, this may not be a problem, but if you want to listen to departments or other services that are not close by, it can be a real limitation.

In fact, the first thing I tell new scanner listeners is to try the whip that came with the scanner. In a metropolitan area, this is often all you need. You're not likely to overload the radio with this simple antenna, and you can get all the action that's close by, which is what you probably want to hear while learning about the hobby.

After that, however, you may wish to branch out a bit or extend your reception range. There's no substitute for outdoor antennas high on a tower — out there with the lightning. Hmmm, maybe indoor has advantages, too. Attics can offer a lot of performance and minimize most of the risk and neighborhood hassles.

But if you don't have an attic, don't despair. There are still lots of things you can do to help your VHF/UHF reception. Antennas meant for outdoor installation will work just fine indoors (of course, the steel and concrete building folks are excluded). The difference is that there is some loss because of the building material, although minimal, and there is a big loss from lack of height. More antenna height is equal to increased range in the scanner world. Nevertheless, it can be beneficial to use these antennas in a variety of situations.

First of all, if you can find an antenna that has gain, it's got to help (unless it causes overload). I have gone so far as to clamp a piece of mast onto a bookcase and then mount an antenna on the mast in the middle of the room. I didn't win any decorator showcase awards that year, but it did improve reception.

I have also used some other techniques for indoor antennas, but for a different reason. You'll remember that I recommended trying the built-in whip; and, in fact, I've been in situations where that would have been plenty, except that the radio was stored on a bookshelf (not the same one that the mast business was attached to), and the shelf wouldn't allow the antenna to be extended. I found two solutions to this, and you can pick whichever works better.

The first is to take a 1/4-wave groundplane antenna (the kind that's available from RadioShack (20-176, $17.99) and remove one or two of the radials as necessary. Then mount the whole assembly

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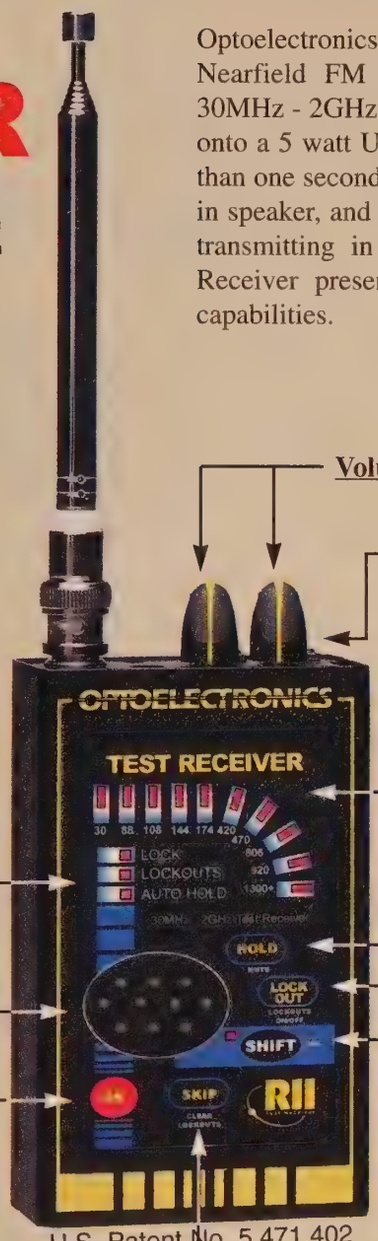

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upside down on the back of the bookcase. This put my antenna up close to the ceiling, and, since it was a two-story building, it worked amazingly well. Discones and ground planes don't offer any gain, but do make good, solid antennas, and they'll work just fine without a radial or two. Don't hesitate to experiment.

You can also use magnetic-mount antennas somewhere else in the room. The problem with magnetic mounts is that they are designed with the idea that they will be stuck onto a vehicle and have all that metal underneath as a ground plane for the antenna. So, for them to be effective, you have to mount the antenna on something metal inside the room, too; a two-drawer metal filing cabinet seems to work pretty well.

You can also get some mileage out of specific bands by using an antenna for that band. Several Trunktracker™ users have reported increased performance by using an antenna dedicated to the 800-MHz band. Lots of handheld users swear by the RadioShack collapsible antenna. This one has the advantage of being tunable to a specific band by expanding or reducing the segments accordingly. It also has the advantage of being cheap, so it's worth a try (Part No. 20-006, $9.99). Putting one of these outside on a mag mount, clip mount, or even suction cups on a window might be the only option for one of those concrete and steel building types we were droning on about earlier.

If you're lucky enough to live in an older building, you might have an antenna already on the roof that nobody is using: the TV antenna! Think about it . . . TV channel 2 runs from 54 to 60 MHz and the high UHF channels end about 896 or so. How convenient. This antenna is designed to cover almost exactly the frequency range we need. The only tiny fly in the ointment is that if it's is used as a TV antenna, it's probably turned horizontally, and it will work better if you can get it vertically mounted. Maybe no one will notice. Or maybe you can put up your own antenna if it looks like a TV antenna. It's worth a try if you don't get free cable in your apartment.

Another possibility that shortwave listeners use is to "roll their own." There's nothing magical about building scanner antennas, and you can build them out of some pretty easy-to-hide materials. The formula 492/F MHz will give you the 1/2 wavelength for any antenna you might want to build; the formula 246/F MHz will give you the 1/4 wave dimensions. A very simple 1/4-wave dipole, which can be fairly easily camouflaged almost anywhere, can be built with wire and a staple gun Simply attach 1/4-wave-length small gauge insulated wires to the center of a coax and the braid — voila, instant dipole. Mount it vertically and you're in business. Of course, we're using insulated wire because we're tacking it with our handy staple gun. Tack it up in some out of the way, or at least not highly visible, location and you're set.

Many other designs can be laid out on window frames, windows, or balconies without anyone ever noticing. Indoors or out, this can be a powerful technique. Keep a few kites around in case anyone wonders what you're doing with all that wire. If someone asks, you can either profess your strong interest in aviation, or suggest that they go fly one if you're not bothering anyone!

Finally, splitting antenna signals is another help if you have more than one radio. Many cable TV-type splitters perform in the exact frequency ranges we need and will work quite well. This allows for one antenna to serve all the radios where necessary. Granted, there are some losses associated with splitting, but if you're limited on antennas, it's better than idle radios with no antenna connection.

Having said all that, what's the performance really like? Well, it depends a lot on your location. Are we giving up signals? Absolutely. Like we said at the beginning, you're not going to get the performance of a carefully tuned outdoor antenna by using indoor antennas. But how much are you losing? Probably not enough to lose any sleep. Sure, the guys with the 1,000-foot outdoor longwires and mast-mounted Yagis are receiving things you may not hear, but you'll still hear plenty using these stealthy antennas. The reality is that in many monitoring situations I've been in, it boiled down to compromise or stop listening to the radio.

Experiment!

My final piece of advice is to experiment. Antennas tend to be relatively easy to play with, and the cost of mistakes isn't too great (assuming the mistakes are not safety violations, which of course are not allowed). See what works. Remember that this is a hobby. One of the neat things about experimenting with indoor antennas is that you don't have to worry about the weather, and you seldom have to mess with ladders. Have fun. And if you come up with something that works, drop us a line! Good listening! ■

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Historic KDYL: Where Did It Go?

After 76 Years, KDYL Went From 50 Watts To 50 kW, Used Eight Frequencies, Had Eight Call Letter Changes! But We Found It!

By Alice Brannigan

During the spring of 1922, Ira Johnson Kaar (Amateur 6ZA), an engineering student at the University of Utah, designed and installed a 50-watt broadcasting station atop the Newhouse Hotel, 400 South Main Street, Salt Lake City, Utah. Two steel masts, 45 feet above the roof of the hotel, supported the station's 150-foot-long cage antenna. On May 8, 1922, the station, which was financed by the "Telegram" newspaper, received the call letters KDYL and authorization to operate on 833 kHz. "The Voice of the Telegram" commenced operations on August 28, 1922. In October, KDYL expanded its operations to include weather and market reports on the secondary frequency of 618 kHz. As of late 1923, all of KDYL's operations had been shifted to 805 kHz, with the station operating daily (except Sunday) from 6:30 p.m. to 8 p.m.

In February of 1924, the Newhouse Hotel purchased KDYL and upped its power to 100 watts, but later that year had to drop it back to 50 watts when the station was reassigned to 980 kHz. A year later and KDYL was on 1220 kHz! In November of 1926, KDYL was purchased by the "Tribune" newspaper's Intermountain Broadcasting Corp., and moved to the offices of its owners in the Ezra Thompson Building, 143 South Main Street. Power was again increased to 100 watts.

By late 1927, when KDYL's motto was "On The Air, Goes Everywhere," the station was ordered to shift to 1280 kHz, but allowed to increase its power to 500 watts. This arrangement lasted only a year until the major 1928 nationwide frequency shuffle caused KDYL to be told to operate on 1290 kHz, but authorized an increase in power to 1 kW. At that time, the KDYL transmitter site was relocated to the corner of 33rd South and Ninth West in the suburban community of Murray, Utah. A single wire vertical was installed at the Murray site.

On the Air
"Dawn to Midnight"
Thank You!
1000 Watts
232.6 Meters, 1290 KC
We are pleased to acknowledge your communication of
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We hope that you will tune in on our station often and let us hear from you again.
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A QSL card from KDYL dates from 1929, and shows how appreciative the station was to DXers.

A Popular DX Station!

From this point on, KDYL became enormously popular with the members of the DXing hobby, even running a special "Nite Owls' Club" every midnight. It was widely heard and reported. KDYL was noted for its appreciation of reception reports and its quick response to QSL requests. This lasted well into the 1930s.

In late 1929, when the station was operating from sunrise until after midnight, KDYL became a CBS affiliate. This affiliation lasted until late August, 1932, when the station switched from CBS to the NBC Red Network. The local CBS franchise was immediately taken over by another Salt Lake City station, KSL.

By early 1936, the FCC gave the green light for an increase in daytime power to 5 kW. As a result, in September of 1938, a guyed 400-foot-tall half-wave Blaw-Knox tower was placed in service along with the station's new RCA 5-D transmitter. The studios (still at 143 South Main) were given a face-lift, including a modernistic stainless steel facade.

In 1939, KDYL obtained a license (W7XXG) for an experimental 441-line electronic scanning television station, although no regular programming was undertaken. In late 1944, the station received a construction permit for channel 2. In January of 1945, it was converted to 525-line scanning and (under its new call letters, W7XIS) went on the air experimentally on April 19, 1948.

Another Dial Shift

The AM station continued to prosper. As a result of international treaty obligations, about 1,300 North American broadcasters were required to shift dial

A 1934 membership card in KDYL's club dedicated to DXers who stayed up until the wee hours turning the dials.

positions in March of 1941. KDYL was one of those stations, and its new frequency became 1320 kHz.

In early 1953, the radio studios were moved to the station's transmitter site, but by summer of that year the KDYL stations (AM, FM, and TV) had been sold for $2.1M, and the new owners promptly moved them back to 143 South Main Street. This was an interim move while new studios were being prepared at 130 Social Hall Avenue.

November of 1959 saw the stations sold again. The new owner, Columbia Pictures Electronics, Inc., paid $3.1M. At this point, it becomes tricky keeping track of the historic station. It's even more confusing because it happens to be unrelated to Salt Lake City's modern station KDYL!

In December of 1959, the famous old KDYL call letters were dumped, and the station was renamed KCPX. Several later corporate names reflected different licensees, however these appeared to be affiliates or subsidiaries of Columbia Pictures, Inc. Affiliation with NBC was dropped in early 1966, as KCPX decided to become an independent station. In the late 1960s, the variety format was dropped in favor of contemporary rock music.

And More Call Letter Changes

In March of 1971, the FCC authorized KCPX to relocate its transmitter to the west bank of the Jordan River, south of 5800 South Street and approximately 2.5 miles south west of Murray. The remote control point was authorized for 1000 West 3300 South, just beyond the Salt Lake City limits.

In 1976, a Top-40 format was started. By January of 1983, new owners had paid $2.95M for the station and the licensee became Crossroads Broadcasting, Inc. The owners changed the call letters to KBUG and the format to Adult Contemporary. Shortly thereafter, Motorola C-QUAM AM stereo equipment was installed and KBUG became an affiliate of the ABC Direction Network. In February of 1986, the FCC approved the station's move of its studios to 434 Bearcat Drive South. That year, the station changed to a Classic Rock format and dropped its ABC affiliation.

Further changes were in store as 1987 arrived. In March, the station's call letters were changed from KBUG, back to KCPX. Maybe not such a good idea because by early August of 1988, the call letters KCPX were ditched and replaced by KEMX to reflect the station's new Easy Mix format. Well, maybe that wasn't a good idea, either, because a year later the KEMX call letters had become history and were replaced by KUTR as the station went into an LDS Contemporary Lifestyle format.

In 1990, KUTR upped its power from 5 kW to 50 kW, while dropping its night power down to 250 watts. These changes coincided with its use of a non-directional antenna system. At that time, KUTR joined NBC's young adult network, The

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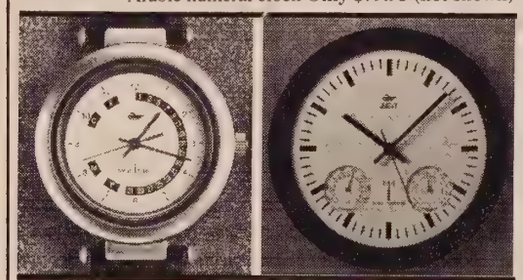

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The Murray, Utah, transmitter site displays the KCPX call letters in this 1972 photo. (Photo by and courtesy of Jan D. Lowry, Castaic, CA)

The Hotel Newhouse in Salt Lake City, as it looked in 1972. This was the original location of KDYL. (Photo by and courtesy of Jan D. Lowry, Castaic, CA)

Source. And, would you believe that in February of 1992, the KUTR call letters were dumped as the station decided to return to using KCPX. Maybe that wasn't such a good idea because in August of 1992, KCPX was again discarded as the station decided to use the call KCNR to reflect the fact that it was airing CNN headline news (under a local marketing agreement). Operations of KCNR had been taken over by Citadel Communications Corp.

Would you believe that in August of 1996, its call letters were once more discarded? KCNR vaporized as the station evolved into KFNZ and began an All Sports Talk format. CNN Headline News and NBC's The Source also ended at that time.

KFNZ remains Utah's second oldest continuously operated AM broadcaster. It operates full time on 1320 kHz with 50 kW daytime (200 watts nights). By the way, the modern day station KDYL in Salt Lake City (1280 kHz, 5 kW) has call letters that appear to pay homage to the historic station, yet it is descended from Salt Lake City's KNAK, which began in February of 1945 (23 years after the original KDYL) on 1400 kHz with 250 watts. The station later shifted to 1280 kHz (once used by the historic KDYL), eventually going through two call letter changes and upping its power to the present 5 kW before ending up as KDYL. The modern KDYL had also been known as KWMS for a few years during the 1970s–'80s.

This information was prepared from several sources, including (with permission) portions of the very detailed historic report on KFNZ prepared by Broadcast Pro-File. BP-F is a professional service that researches and prepares historic profiles on all American AM and FM broadcasters, past and present. A reasonable fee is charged for these excellent reports. For a catalog and more information, send $1 to Broadcast Pro-File, 28243 Royal Road, Castaic, CA 91384-3028.

Well, that's a wrap for this time. We always look forward to receiving old time radio and wireless picture postcards, photographs, QSLs (originals or good copies), newspaper clippings, and station directories. Everything is appreciated! Our mail address is Alice Brannigan, *Popular Communications*, 76 North Broadway, Hicksville, NY 11801. You're also invited to send anecdotes, comments, and column suggestions by e-mail to <Radioville@juno.com>. Let's meet on the road to Radioville! ■

The Radio Connection

BY PETER J. BERTINI, K1ZJH
<RadioConnection@juno.com>

A LOOK BEHIND THE DIALS

Telefunken Revisited, And Our Philco Saga Continues . . .

Our past few columns have generated quite a bit of reader feedback. Barry Rowan's restored Telefunken from the January column apparently struck a chord with our readership. Joe Carr writes: "Your article brought back fond memories. My radio mentor, and surrogate father figure, was a next-door neighbor named Hugh T. Collins. He was a radio engineer for The Voice of America. He headed the Post Equipment Branch for the VOA, which means he supplied electronic equipment and radios to U.S. embassies and 'other' posts. He owned a radio like Barry's.

"When Hugh learned that our ambassadors and senior diplomatic personnel — who were issued shortwave receivers as a matter of course — were using Collins 51J4 receivers, which were in short supply in the VOA relay stations, he decided to poll the diplomats. Almost to a man they were unable to figure out how to use the Collins' J4 and needed a technician from the embassy staff to pretune it to a VOA station for them. All they would do is turn it on to catch the latest VOA news, and turn the set off when finished. Hugh re-placed all of the Collins sets with Telefunken Allegro. The bureaucrats were delighted! They had sets that would do the job, and looked like (to a non-techie) a 'real radio'! Thanks for dredging up fondly recalled memories."

Reader Joe Lynn adds these comments: "Your recent article featuring the Telefunken tabletop was very interesting. I own a few of the 1950s-era Grundigs, and I am also fortunate enough to know an engineer who specializes in the older German radios. He was able to bring a Grundig Majestic 1099 back to top performance with just a few days' work. Considering the radio cost me $25 at a garage sale, I think I did OK! Your reader was right on target with his repair work — the wax capacitors are the first thing my friend replaced.

"Feel free to check out my radio Web page at <http://user.mc.net/~jtl/radio>. Thanks for a great column!"

A few readers have requested that I cover German radio restoration. I will try to do so, but at present I don't have any German sets on hand. Also, I am not versed in offering advice for finding service data or original replacement parts for these radios. I will be researching this data for a future column.

Continuing With Our Philco 89 Restoration

We've pretty much covered rebuilding the Philco bakelite block capacitors, the capacitor bypass bank assembly, and the tone control capacitor assembly in our model 89 cathedral radio. The resistors were tested, and those which were more than 20 percent off value were replaced.

Last month, I suggested a few cures for a badly rusted chassis. The radio is starting to look pretty darn good! A few minor touch-ups remain before we are ready to power it up and do the alignment or unexpected repairs.

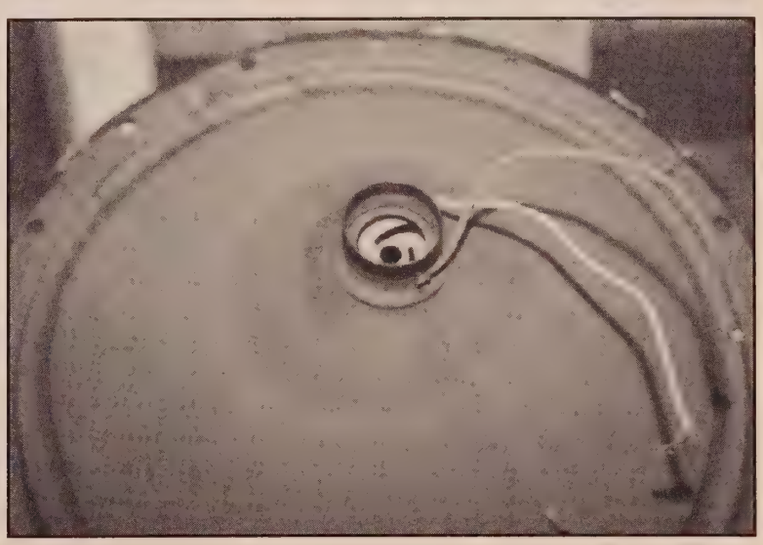
A "Sometimes" Klutz

As I was picking up the Philco 89 cabinet from my refinisher, I managed to put my fingers through the speaker cone, leaving a rather large tear. Yes, I am a klutz. But, this unfortunate turn gives us a good topic for this column: fixing simple speaker problems.

What Makes A Speaker Work?

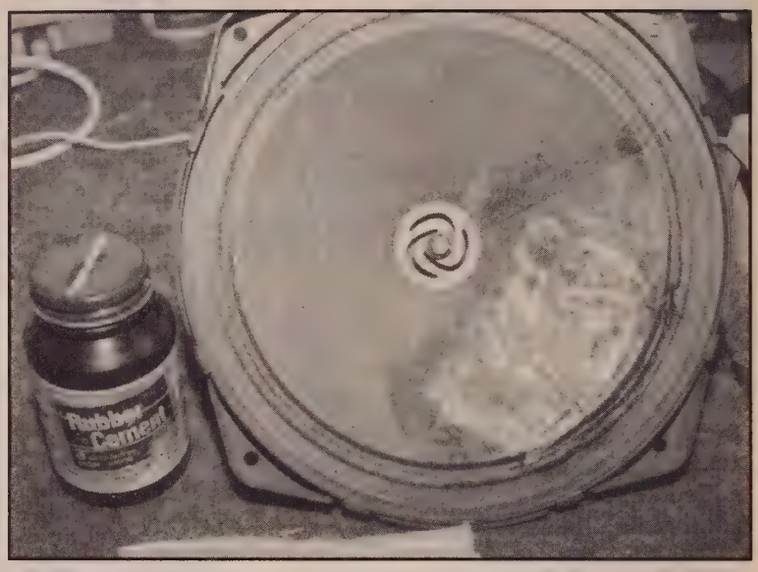
Ask an engineer to explain how a speaker works, and he will probably compare it to a "linear motor." If you apply a small 1 1/2-volt battery to a modern PM (permanent magnet) speaker, the cone will either move in or out. Reverse the polarity, and the cone will move in the opposite direction. This motion is caused by magnetic poles generated by a small bobbin of wire — the voice coil of the

Careless handling tore the Philco 89 speaker cone.



Some early speaker cones could be easily removed for service or repair. Note the voice coil bobbin at the rear. The spider centering support can be seen at the bottom of the voice coil.

The adhesive between the speaker frame and the suspension of this speaker has failed, allowing the cone to separate from the frame. It needs to be reglued to prevent "rattles." This photo also gives a good view of the centering spider and its lockscrew.



Generous applications of rubber cement are applied over the tear, and on the teabag paper used for a patch. This photo shows the cone and the suspension system between its outside circumference and the metal speaker frame.

speaker — and its relationship to the fixed magnetic poles of the permanent magnet. Like magnetic poles repel; opposite poles attract. The stronger the voltage, the stronger the magnetic field produced by the voice coil, and the greater its travel. In modern PM speakers, the magnet supplies the fixed magnetic poles. In electrodynamic speakers, the fixed magnetic poles are generated by passing a DC current through an electromagnet. The electromagnetic bobbin and cone combine to convert electrical energy into mechanical energy: sound.

Speaker cones are made from stiff, heavy stock paper. The entire cone should move, without flexing, as it follows the movements of the voice coil. The speaker diaphragm is made in the shape of a cone because this shape forms a strong structure over the directions in which it is driven by the voice coil. A flat paper diaphragm would buckle, causing sound distortions and inefficient conversion of electrical energy into sound energy.

Many speaker cones have become quite brittle in 60 years time. This is because paper is treated with sulfuric acid during production, and some papers contain larger amounts of acid residue than others. Over time, the paper slowly decomposes and becomes brittle.

Early electrodynamic speakers were a relatively expensive radio component. They were made to last, and were repairable. New speaker cones, field coils. and other parts could be ordered to fix a bad speaker. Some fancier electrodynamic speakers used mounting hardware instead of glue to mount the cone assembly — removing the hardware and unsoldering a few wires allows the cone to be removed for repair or service. For cones that are glued, special solvents were (and still are, I believe) available to assist with removal and replacement.

Torn Speaker Cones

Simple tears can be fixed without removing the speaker cone from the frame. One "trick" I have used for many years is to coat older brittle speaker cones with Sanford rubber cement. Recently, I've seen the same technique suggested on an antique radio Web site, so I feel a little more comfortable passing this suggestion on to you.

The rubber cement strengthens the paper and restores its pliability. It should also help seal out moisture and prevent further decay. The cones have a special suspension between the edge of the cone and the frame circumference. The suspension is designed to be very flexible,

With the speaker cone removed, the magnetic pole piece the voice coil bobbin rides over is clearly seen. Note the very tight tolerances! The mounting hole for the spider lockscrew is easily seen in the center of the magnetic pole piece.

allowing the cone free movement on an axis parallel to the voice coil bobbin and electromagnet. The suspension should be given an extra application of rubber cement to maintain its pliability. Sanford rubber cement is supplied in small 4-ounce bottles and includes a small brush applicator in the cap. Your local office supply store carries rubber cements.

Fixing Tears

Large or small tears are easily fixed using the rubber cement. Small tears, under an inch, can often be patched by simply aligning the torn surfaces, and covering the tear line with two or three generous applications of cement on both sides of the cone surface. Larger tears will need a "patch" for reinforcement. I've found that the paper used for teabags works quite well for patching torn speaker cones. The Philco 89 speaker tears were repaired by coating the cone with several generous applications of rubber cement. A section of teabag paper was cut to fit over the torn area, with some overlap. The teabag was also coated with several very generous applications of rubber cement, and then placed over the tear and worked into place. Another coating of rubber cement was applied over the patch and cone.

If the glue has saturated the teabag paper sufficiently, the repair will be almost invisible. Don't worry if the cone surface remains somewhat tacky, as it will eventually become dry to the touch.

Rubbing Speaker Bobbins

A more difficult repair is dealing with cones that are "rubbing" — the small voice coil bobbin is dragging on the electrodynamic magnet. There can be several causes for this problem. Dampness can cause the speaker cone to become misshapen, or warped. This, in turn, may twist the bobbin assembly far enough that it no longer clears the magnet over all, or a portion, of its travel. Speakers with rubbing bobbins can mimic the distortion caused by problems in the audio amplifier stages of a receiver. Modern speakers have a small felt on covering the end of the bobbin which prevents dirt, dust, and tiny metal filings from entering the bobbin area. Early speakers had a simple "spider" assembly that offered no protection from dust or dirt entering into this area. Modern speakers also use a special cambric fabric that is attached to the bobbin and the speaker frame. This forms a suspension system which keeps the voice coil in alignment. The early "spider" — a spiral of three arms made from flexible material — attached to the bobbin and the center of the magnetic cylinder the bobbin travels over, providing alignment between the bobbin and magnetic pole piece. The spider is adjustable; loosening the mounting screw permits moving the spider and bobbin in any direction due to an oversized mounting hole.

Early servicemen had special speaker shims of various thicknesses. When the spider was loosened, they would insert three of the proper thickness shims between the bobbin and magnet to set the proper gap, and then tighten the screw and remove the shims.

If you have a gentle touch, you might try using three fingers from each hand on either side of the cone and gently pushing inward. With some experience, you will feel when the bobbin is rubbing. If rubbing is felt, you can get a feel for which direction the bobbin should be moved by

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applying slightly unequal pressure on either side of the cone at several points to find a point where the bobbin appears to move freely.

Homemade speaker shims can be made by cutting narrow strips from papers of various thicknesses. Occasionally, I've found cones that are completely frozen — dirt has fully packed between the bobbin and magnetic pole piece. If you run across this, you'll have to remove the cone, clean the bobbin assembly, and clean out the crud in the gap of the electrodynamic magnet assembly. At worst, you will have to send the speaker out for professional repair. Besides re-coning, some of these specialists will rewind bad field coils.

Some very early 1930s vintage speakers used a leather-like material for the suspension system around the cone perimeter and speaker frame. It's common to find these early suspensions, also called surrounds, to be completely disintegrated after being stored in a damp cellar for 70 years. Again, this is something I would send out to a pro for repair. I have several speakers that need the attention of a pro, and we will be investigating these services in more detail in future columns.

Other Speaker Repair "Tricks"

We've discussed replacing electrodynamic speakers with more modern PM speakers. There is another trick I have used that you may wish to consider. Using a PM speaker detracts from the originality of the set — I only do so as a temporary measure when the speaker is missing and until I can find a suitable replacement. But, what to do when you find yourself restoring a fairly common and inexpensive radio whose a speaker needs the field coil rewound, or other expensive services?

The open field coil can be replaced by using a power resistor with the same resistance as the field coil. At RadioShack, you will a good assortment of small hi-fi speakers in the 3- to 5-inch range. Take the old speaker to RadioShack, and find a replacement that will fit comfortably when nestled between the speaker cone and counter top. Be careful not to puncture or tear the old cone!

A new speaker backboard is needed to mount the new speaker. Cut a section of 1/8-inch plywood to fit the mounting frame of the old speaker, and drill four holes that align with the mounting holes on the old speaker. Use a larger size hole saw, or a scroll saw, and cut an opening for the replacement speaker. Mount the new speaker to the new speaker backboard. Use flathead screws, and countersink the plywood so the screw heads do not show or protrude into the grille cloth. The wires from the audio transformer secondary will have to be removed from the old speaker, extended, and run to the new speaker. When everything is put back together, you will have kept the original appearance of the set and have a nice sounding radio.

Well, the torn speaker in the 89 set is repaired. I mentioned doing some tube repairs last month, but I am out of space for this issue, so we will pick up on that topic next time! ■

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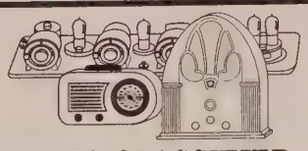

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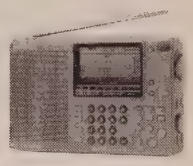

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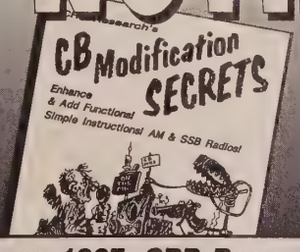

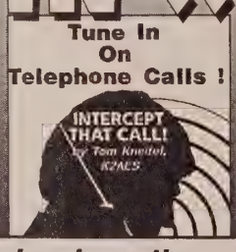

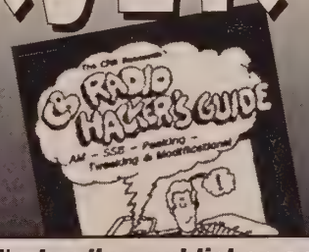

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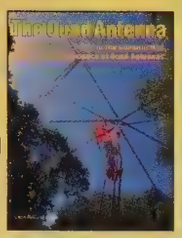

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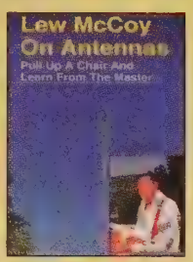

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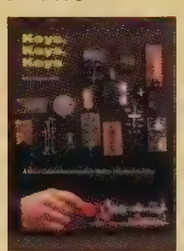

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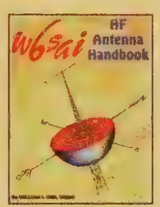

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Radio Resources

INTERESTING THOUGHTS AND IDEAS FOR ENJOYING THE HOBBY

Navigating With Very Low Frequencies

Now that we have explored the 1500-MHz Global Positioning System (GPS) navigational signals, let's switch down to low frequency and very low frequency and hear what the U.S. Coast Guard is doing to make our little GPS receivers even more accurate than they are without signal corrections.

There's plenty going on, and off, down below 550 kHz, the bottom edge of the AM broadcast band! In fact, if you have one of those new ICOM PCR-1000 computer-controlled radios, dial in 300 kHz, and turn on the spectrum display. You will be looking at 100 kHz to 500 kHz. *Wow* — look at all of those signals!

Looking at the ICOM spectrum display, you would think that the band is packed with activity. Sorry, most of those signals you are picking up are probably noise spurs coming out of everything from your FAX machine to your light dimmer switches. But between some of the garbage are some interesting "finds" that are indeed from low-power and high-power radio transmitters. Here's a look at this portion of the radio spectrum:

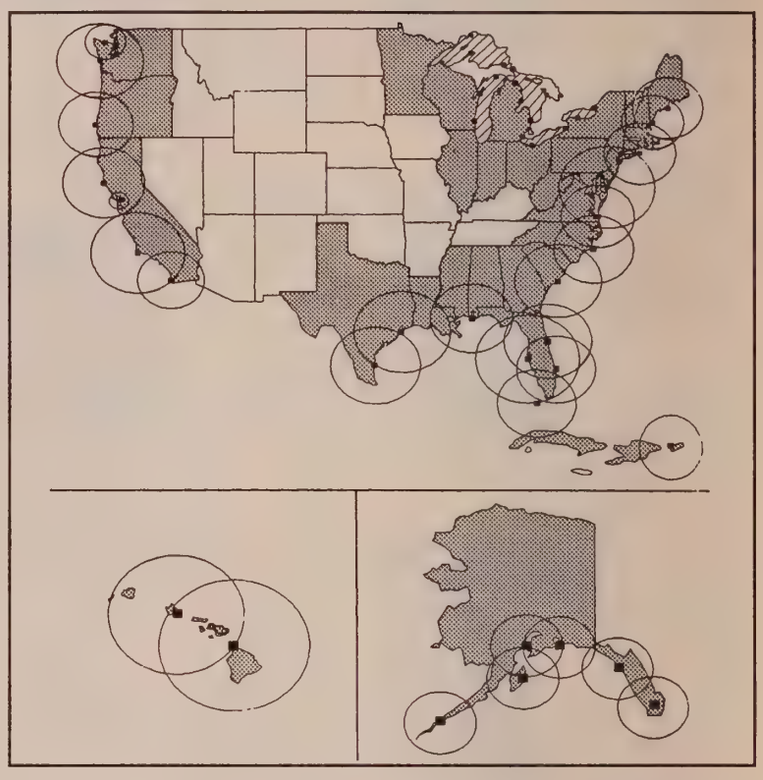
- ☞Around 100 kHz — Present Loran-C signals
- ☞160 kHz–190 kHz — Part 15 one-watt experimental band
- ☞200 kHz–500 kHz — Radio beacon band for differential GPS correction signals
- ☞500 kHz — Old CW distress frequency
- ☞518 kHz — Marine NAVTEX broadcasts

Formerly at 10 kHz, the 25-year-old Omega worldwide navigation system is off the air. For more than two decades, the United States Government, led by the U.S. Coast Guard, was in partnership with six nations to insure the safety of navigation of ships and airplanes around the globe by means of Omega. Each nation staffed and operated its own Omega station with funding and technical support provided by the current U.S. Coast Guard Navigation Center. But now that GPS is fully operational, the Omega navigation system is no longer necessary, and the big switch was thrown on 30 September 1997.

The United States operated two Omega stations: one in Kaneohe, Hawaii, and the other in LaMoure, North Dakota. Hawaii will dismantle its station, located over 698 acres of lush rain forest, and probably turn the land into a public park. In North Dakota, the Omega station will be turned back over to the U.S. Navy which will use the enormous antenna system for its new 500-kHz, solid-state, very-low-frequency communications system. The Navy facility will serve two purposes: first, it will serve as a test site for the engineering of the solid-state 500-kW transmitter, and second, it will act as a back-up site to mitigate the effects of broadcast outages at other very-low-frequency stations.

Moving Up A Bit

Up at 100 kHz, you will hear the drone of Loran-C chains. Even though GPS is far more accurate than Loran signals when exploring new regions that you have not been to before, low-frequency Loran chains still have their place in our navigation future before Loran stations throughout the country go off the air, around 2005.



Here's a look at the U.S. differential GPS beacon coverage. With an add-on differential low-frequency receiver, you can resolve your position down to a few yards. (Courtesy U.S. Coast Guard)

Loran groundwave signals are ideal for precision position repeatability fixes. Once you electronically spot a position on land, a lake, or out on a harbor, you can get back to that exact spot within about 10 feet with an inexpensive fixed or portable Loran receiver. That's right, 10 feet! That is 10 times better than what a little portable GPS set can do for repeatability. If you are out treasure hunting on the desert, and you find something real special that you want to get back to a few months later after the sands have shifted, you would do much better with a Loran position fix than you would with that new little GPS receiver.

Boaters are dumping their Loran sets for next to nothing. Chances are, they'll give you the equipment, just for the asking. Most boaters don't need this 10-foot repeatability feature, and they want to go with the latest technology — GPS. Boaters also believe that the Loran service is getting shut down next year. It's not.

Almost all of the country is covered by several USA Loran chains. If you can hear the buzz-saw sound down at 100 kHz, chances are you have terrific Loran reception in your area. Now, find a boating buddy with an old Loran set, and take it off their hands. The Loran will read out your position in either time delays or in conventional latitude and longitude.

Radio Direction-Finder Beacons

The radio direction-finder band has been around for years. Tune from 200 to 500 kHz, and chances are that you'll bump

into a non-directional radio beacon sending out a slow CW identifier. You can still hear plenty of radio direction-finding (RDF) stations, still on the air, around the ocean regions. Inland, try to tune them in via nighttime skywaves.

The principle of navigating with an RDF is to tune in the station, identify the station at a fixed location on your map or chart, and then rotate your directional loop or loop-bar antenna for a signal null. This would usually indicate the relative direction of the transmitting beacon. You will actually receive two nulls — each one 180 degrees different — so you need to pick up a few more stations in order to triangulate the bearings to your position on land, in the air, or at sea.

The RDF stations were becoming "old technology" in navigation, and many were scheduled for close-down. But then the U.S. Coast Guard came up with the idea of using those very same RDF transmitting stations for sending along a minimum shift keyed data signal that would make your little portable or fixed-mount GPS more accurate — all the way down to 15 feet! But you needed a little differential beacon receiver (DBR) box that would strap onto your portable GPS, or tie into your fixed-mount GPS, to receive this datastream from your local radio beacon that would piggyback the MSK differential GPS signal.

There are 54 radio beacon installations throughout the United States that carry the MSK data signal. Tune around between 200 and 500 kHz, and see if you can pick up the CW identifier of a radio beacon. Now listen carefully. Do you hear a little RTTY-type sound that is constantly riding along with the carrier? That's the differential beacon signal that takes out most errors in our new GPS system.

Today, the railroads want improved GPS reception, so they are teaming up with the U.S. Coast Guard as part of the Railroad Positive Train Separation System. But where are we going to find more radio beacons around the country that might serve the inland area?

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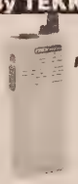

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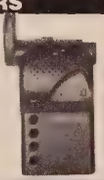

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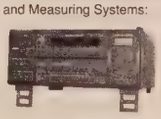

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The proposed coverage map showing differential GPS expansion around the country.

The Air Force indicates that they have all sorts of powerful low-frequency transmitting systems sitting idle — the obsolete Groundwave Emergency Network (GWEN) that could carry differential GPS minimum shift-keyed signals. Using these stations would save the Department of Defense about $6 million in GWEN decommissioning, and it would also save the Department of Transportation about $10 million in differential GPS implementation for the railroads, as well as other civilians who may wish to use GPS for driving.

The plan calls for 33 obsolete GWEN sites to go on the air with differential GPS correction signals. Twenty-five more will be moved, and eight will be constructed. Each site will be installed in two phases. The first phase will provide single differential GPS coverage to the entire country. The second phase will provide dual coverage.

The broadcast of the differential GPS corrections will be free under Public Law 105-66, Section 346. Present DBRs (they cost about $500 and simply plug into a differential-ready GPS set) will continue to work with the new inland differential GPS stations. The system will be operated by the government, and will still be subject to instant shut-down for national security. You see, our present GPS signals are slightly "dithered" to ±300 foot intentional error to keep the enemy from zeroing in on one of our nuclear reactor smoke stacks. The way I see it, if they miss by 300 feet this way or that way, we're still in deep trouble!

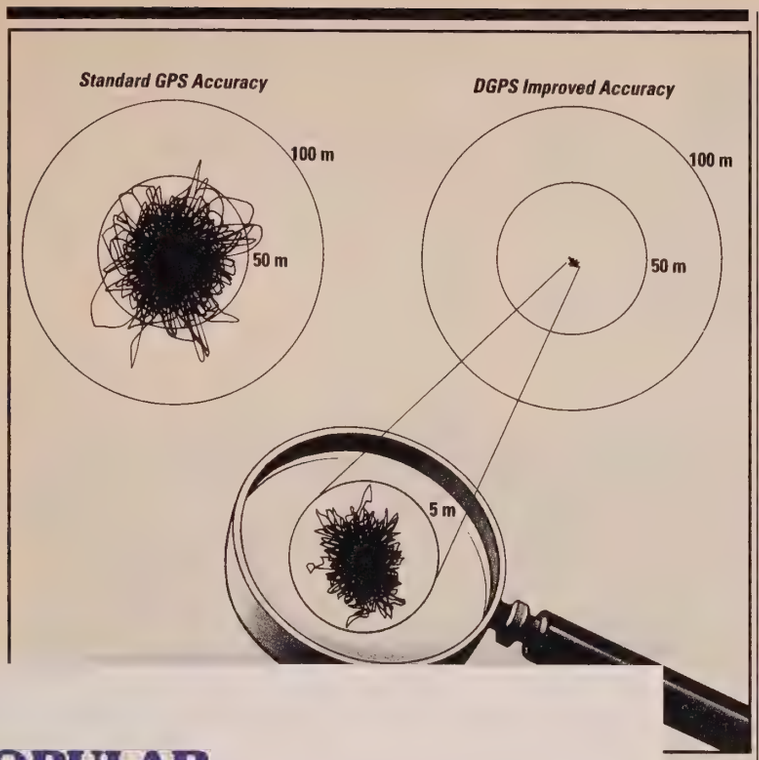
Better Accuracy!

GPS signals also incur errors of about 100 feet due to changes in our ionosphere and atmosphere. These differential beacon stations, many on the air right now, allow for the free reception of low-frequency correction signals that are fed into your GPS, resulting in a much more accurate position readout. With the reception of a *differential GPS signal,* your little GPS can now be as accurate as that old Loran set for position repeatability. But keep in mind, differential beacon reception requires a separate low-frequency box and a rather large loaded antenna system tuned to around 250 kHz.

There are other ways of obtaining differential GPS correction signals, but they cost from $30 to $300 a month, depending on how accurate you want to spot yourself. The free differential GPS correction signals that will soon be nationwide on low frequency are a great way to obtain FREE corrections without having to subscribe to FM subcarrier signals.

Someday, the global positioning system with differential corrections will be as common as your regular AM/FM car radio. It is envisioned that an integrated vehicle safety system consisting of a differential GPS receiver, map matching, collision sensors, and satellite communication links will help prevent accidents, and notify emergency personnel when an accident has occurred. A collision sensor, similar to the sensor in an air bag, could automatically send a preformatted message to an emergency center at the instant an accident occurs, using your differential GPS-derived position as the accident location. No longer would you have to wait for someone to drive by to receive help.

So, when shopping for a small GPS receiver, see whether or not it has the capability for differential signal input. If you see the terms "NMEA data port," this tells you that it is differential-capable. Then obtain a small differential beacon receiver, start the datastream flowing, and stand by for the low-frequency sig-



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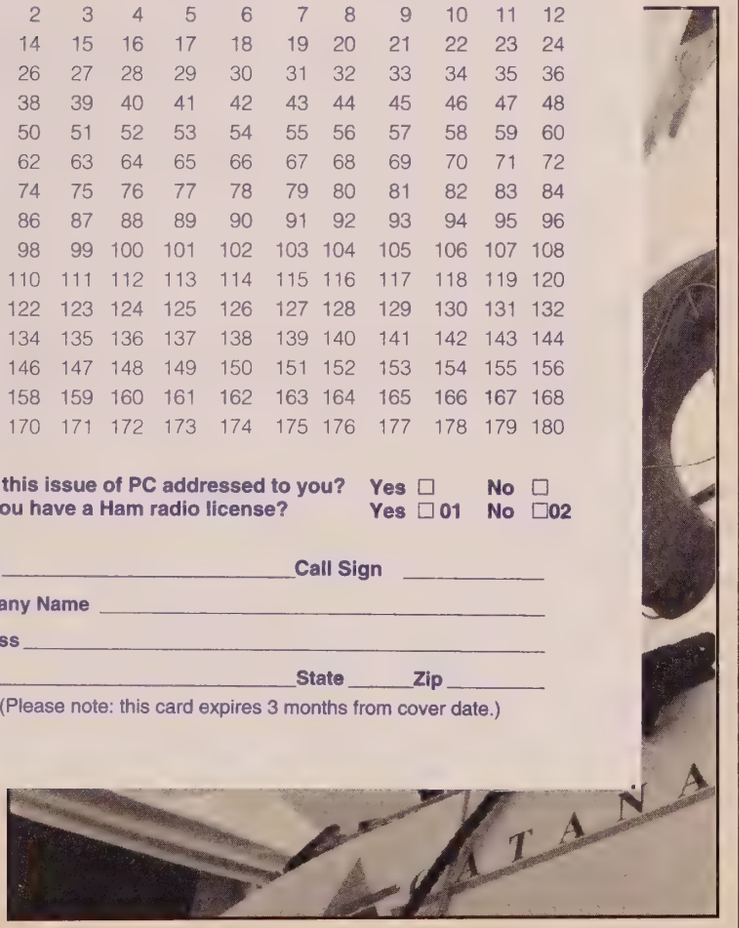

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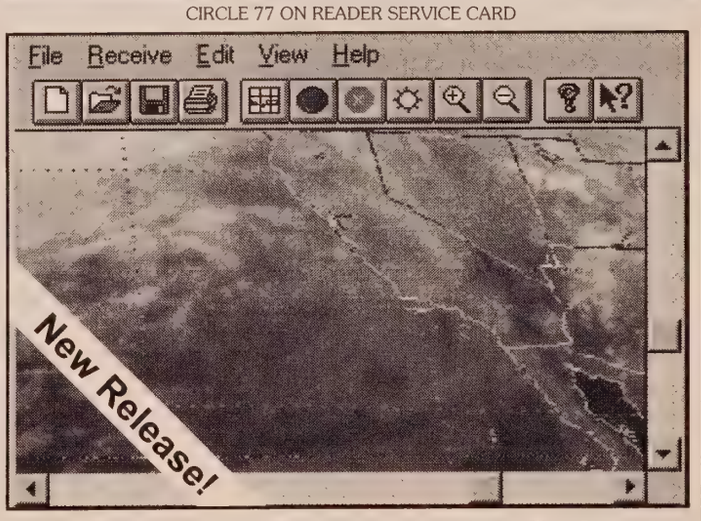

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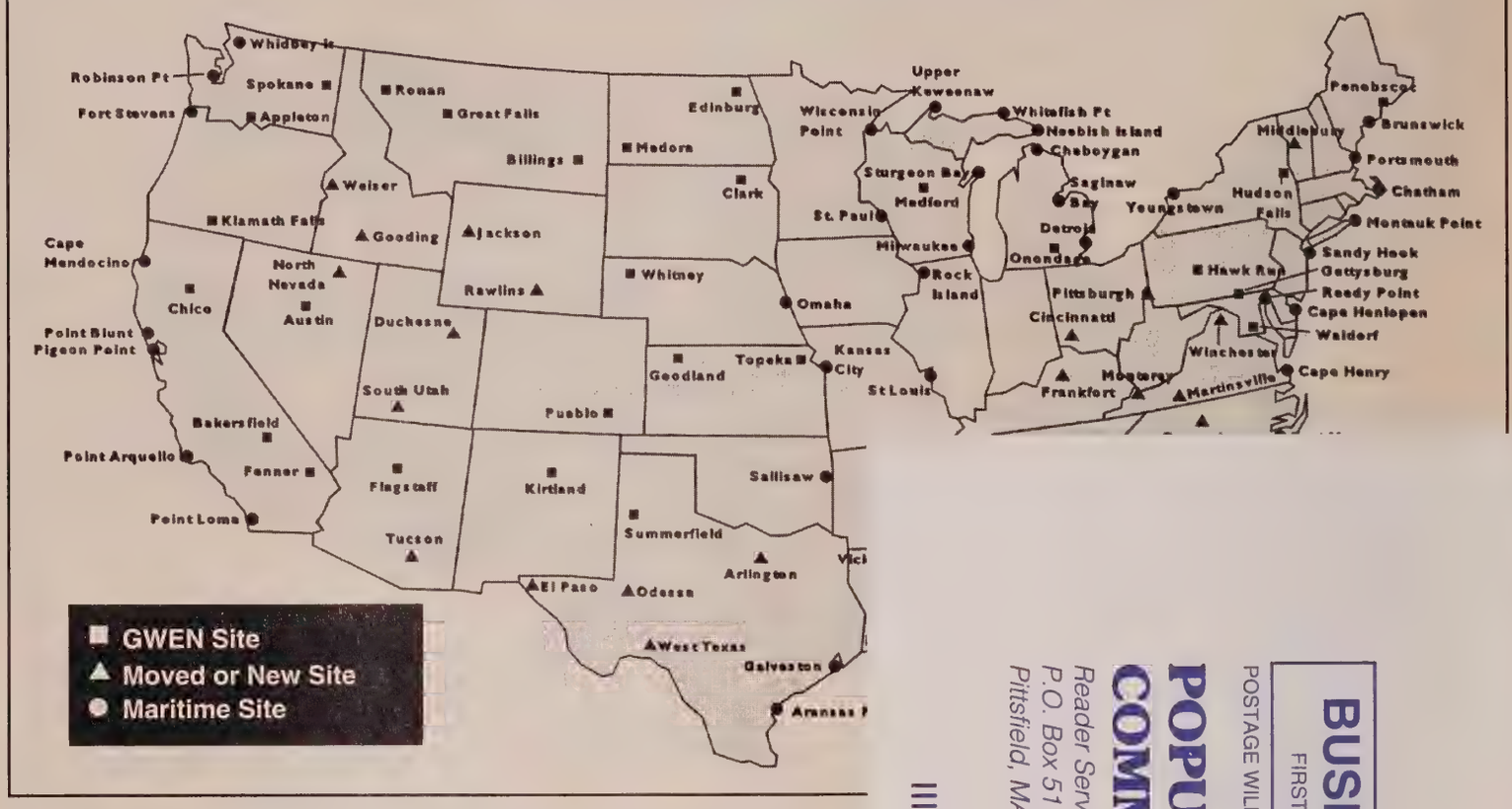

The proposed coverage map showing differential GP

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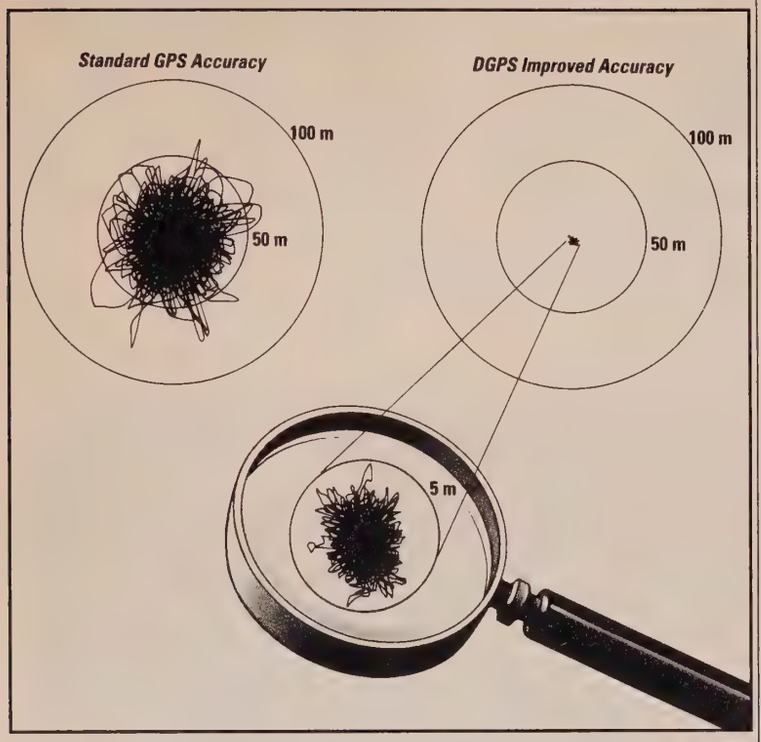

Differential beacon reception added to the GPS set improves GPS accuracy by 10 times! (Photo courtesy Leica)

nal to update your GPS calculations every second or so with a position fix no worse than 10 feet in error.

But, right now, tune between 200 and 500 kHz, and listen for that minimum shift-keyed signal riding along top of the old RDF beacon carrier. ■

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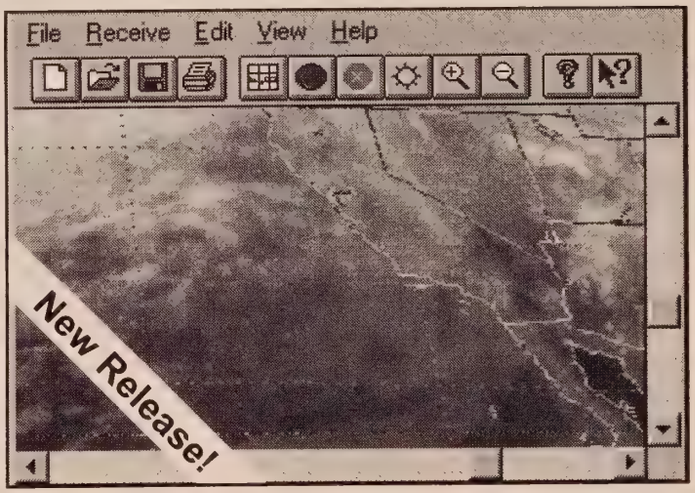

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BY HAROLD ORT, N2RLL, EDITOR

Product Spotlight

POP'COMM REVIEWS PRODUCTS OF INTEREST

SGC's PowerClear Add-On DSP

Printed up front in the PowerClear *Digital Signal Processing Facts and Equipment* booklet are the words "Hear in the Clear" — it's probably the best overall description of this state-of-the-art SGC product! The PowerClear unit is an external digital signal processing (DSP) box that's essentially the same as an internal unit, except it connects between your radio and your headphones or speaker. Very simply, the audio signal passes from your receiver (or transceiver) through the DSP unit and, well, the results are unbelievable!

The SGC PowerClear Add-On DSP is a full-featured DSP unit in a small package.

What DSP Does For You

Digital signal processing converts the analog signals in your receiver to digital data, then back to analog signals. So what, you ask? If you've ever fumed at the static and heterodynes while trying to pull out that distant station or if you've experienced static and noise on VHF or UHF frequencies, the PowerClear is the answer to your prayers. It filters out this unwanted noise and garbage — providing advanced DSP technology which works on HF, VHF, and UHF. And you can even adjust the bandpass of the audio signal, using it in combination with other PowerClear controls to easily tweak the audio for the best possible sound. This filtered audio virtually eliminates noise and interference that accompany the desired signal.

The PowerClear has its own internal .5-watt, 2-inch speaker, adequate for most applications, but the back of the unit is packed with jacks for connection to your external 5-watt, 4- or 8-ohm speaker, or 600-ohm line. Connection to your receiver is simple: a Motorola-type (RCA) cable (not supplied) is plugged into the rear of one of the "audio in" jacks on the PowerClear. The other end of the cable plugs into either your receiver's speaker output or 600-ohm line output. The PowerClear comes with a small barrel-type plug that you connect to a 13.6-Vdc power supply. (Remember to always check polarity when connecting one of these plugs on the PowerClear or any other device — check the drawing on the back of the unit!) In this case, the center pin is positive.

I didn't use the PowerClear in the car, although the folks at SGC have thoughtfully attached a versatile mobile-mounting bracket that lets you mount the unit in virtually any position. And the PowerClear is small — only 4 x 6 1/2 x 2 inches — fitting even in the tightest spots.

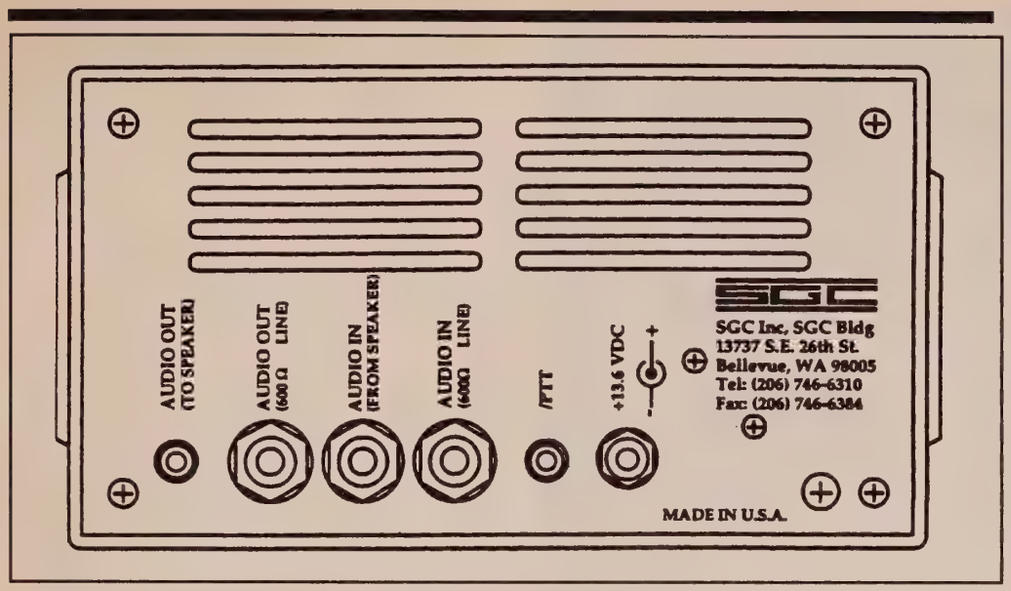
In my shack, all of my radio gear is within arm's reach on a four-foot table; the PowerClear is mounted under the edge of a top shelf. It's a smart-looking piece of high-tech gear that, frankly, once you've used it, you'll wonder how you ever got along without one!

Using The PowerClear

The PowerClear is packed with DSP filtering; Adaptive Digital Signal Processing (ADSP)™ for wideband noise reduction; Spectral Noise Subtraction (SNS)™, which allows the unit to reject portions of a signal and pass the intelligible portions to the speaker; and variable low and high-cut filters, which are user-adjustable; and a selectable notch filter, which can attenuate up to five tones simultaneously from 0 to 4000 Hertz up to 40 dB.

Before turning on the unit — the rotary volume/on/off control is on the lower right side — and fiddling with the controls, I'd recommend sitting down with the well-written manual and familiarizing yourself with DSP and the unit itself. It's time well spent, because this super device has lots of features to enhance your radio monitoring that you'll only appreciate and understand after reading the instructions.

With a total of eight preset filter combinations (in wide, medium, and narrow) for voice, CW, AMTOR, and other modes, you can also program your own filter combinations to suit your specific listening needs. Using the unit is relatively straightforward: connect it to your receiver or transceiver, turn it on, and adjust the volume on the PowerClear for 1/3 to 1/2 illumination of the green bar



A look at the PowerClear's rear panel. The sturdy metal case attests to the solid overall construction of this DSP unit.

LEDs. Proper adjustment of the controls during my tests virtually eliminated the hiss and popping noises while I tried to listen to several international shortwave broadcasts. The difference was truly remarkable, and the resulting signal didn't sound strange or unnatural.

On sideband, I tried the unit on the familiar 11175 USB military frequency and was astonished at the improvement in clarity of reception — gone was the static noise that often obliterates reception! Even using the PowerClear as a preamp, it performs exceptionally well.

The settings/controls take some getting used to, but once you've mastered them, and adjusted your radio's volume in conjunction with the PowerClear, you're in for a treat that will make you an instant believer in DSP technology! And the PowerClear features go on and on . . . like its front-mounted jack for your headphones; its mil-spec shock/vibration standards; its stand-alone DSP design; its ability to drive an external speaker unit or to act as a pre-amp to feed another audio amp; its well-illustrated and explained manual that answers all your questions. It's one of those shack accessories that's becoming more of a *staple* as radio monitors struggle for ways to eliminate noise-laden signals that with the new DSP technology and the SGC PowerClear are a thing of the past.

The PowerClear, which retails for $395, is manufactured in the U.S. by SGC Inc., SGC Building, 13737 SE 26th Street, P.O. Box 3526, Bellevue, WA 98009. For more information on the PowerClear, call them at 800-259-7331 or 425-746-6310 or visit their Web site at <http://www.sgcworld.com>. ■

PowerClear's Specifications

Audio Output	To external speaker, 5 watts, 4 ohms/8 ohms, 0–3.5 V rms
Audio Output	Line, 600 ohms, 0–350m Vrms
Audio Input	From transceiver line out, 600 ohms, 100–350m Vrms
Frequency Response	300–3200 Hz ±3 dB
Internal Speaker	.5 watt
Absolute Output Delay	130 ms, SNS™, ADSP™, bandpass modes 0 to 20 dB, adjustable (AMT, SIT, PAC, and ACE)
Adaptive Noise Reduction	10 db, typical
Notch Single Tone Reduction	Greater than 40 db (up to five tones)
Notch Action Time	Less than 20 ms
Data Mode Output Delay	Less than 2 ms.

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Antennas & Things

BY JOE CARR, K4IPV
<carrjj@aol.com>

SIMPLE ANTENNAS AND ACCESSORIES FOR SIGNAL IMPROVEMENT

Multi-Band HF Antennas — They're "Real Serious Antennas"

The first shortwave receiver that many people buy will have either a telescoping whip antenna mounted on the radio, or will use a single wire antenna unceremoniously connected to the "ANT" jack on the rear panel. That type of antenna works well when you are first starting out, and indeed, depending on your own needs, may work well into the future. But once you get a "Real Serious Shortwave Receiver" (which means "BIG BUCKS"), or gain the tuning skill required to separate more than the BBC, the Voice of America, and the Voice of Russia from the noise, a "Real Serious Antenna" can improve the performance of your receiving system.

The operative word here is "system." The receiver is only one piece of an overall system that exists to receive shortwave signals. Although there are other elements that may or may not be needed, depending on modes, your goals, and the nature of the receiver itself, the antenna is a constant across all shortwave radio receiving systems. Enhance the antenna, and you enhance the whole thing. Indeed, if I had limited money (which I do), then I would put most of it — or all of it — into the antenna rather than such accessories as preamplifiers and preselectors (the latter may be needed for excluding unwanted signals, but otherwise does not usually add much to overall reception). The payback for an antenna is simply greater than for other accessories, especially in the shortwave bands.

Antenna Attributes

The receiver antenna can provide several different attributes. Because these attributes vary quite a bit from one antenna design to another, it may also be necessary for you to have more than one antenna. In other cases, you will need to select a single antenna that meets your needs the most, even though not totally. We will talk about the various attributes of radio antennas in this column in the future. For now, let's focus on the issue of how to get a multi-band antenna in a limited space, or on a limited budget.

That first 30-foot slug of wire that you tossed out the window and over a tree limb when you bought your first receiver is an example of a *non-resonant* antenna. A statement that is generally, but not totally, true is that resonant antennas tend to pick up more signal and deliver it to the receiver than do non-resonant antennas. Unfortunately, most resonant antennas tend to be single-banded, and that

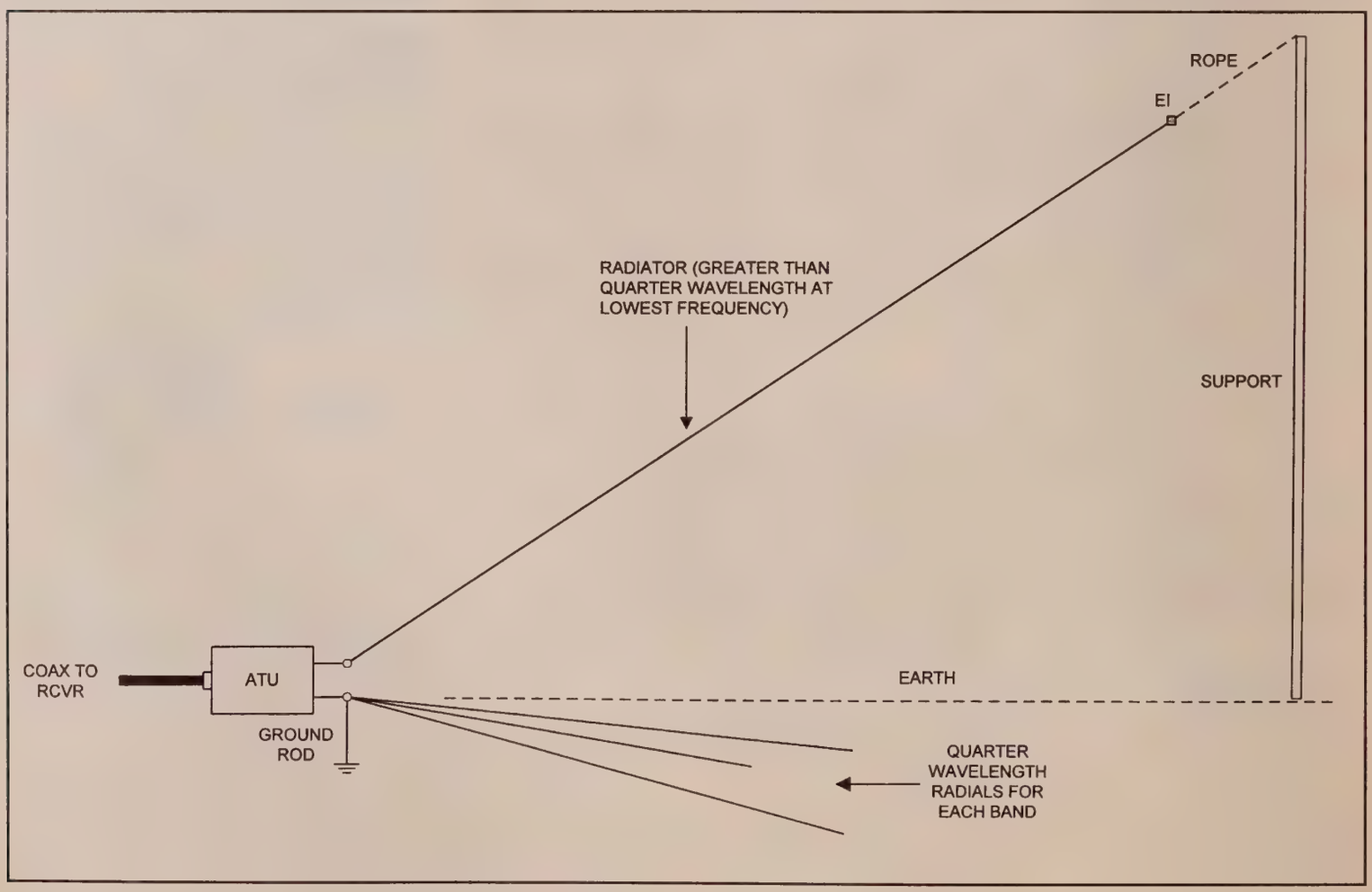

Figure 1. Random length, ATU-tuned multi-band antenna.

means shortwave listeners will need several antennas to do the job. Or do they? In this month's column we will take a look at several options for making a multi-band antenna.

Random Length Wire Antenna

We started out with the premise that a first-time shortwave listener has a chunk of wire, 30 to 100 feet long, slung out the window to some convenient support, such as a tree limb. **Figure 1** shows a variant of that type of antenna that is tuned, more or less, and is multi-band. The radiator element is at least equal to a quarter wavelength on the lowest frequency of operation. For example, for coverage of the HF band, you might want to make the wire radiator element at least 82 feet long (100 feet is nice). The basis for this length is Length (Ft.) = 246/FMHz, where FMHz is the 3 MHz lower end of the HF radio spectrum.

The key to this form of antenna is the use of an antenna tuning unit (ATU) that can convert a high-impedance antenna down to 50 or 75 ohms. Several suitable models can be found in advertisements in this magazine or the catalogs of the major shortwave dealers.

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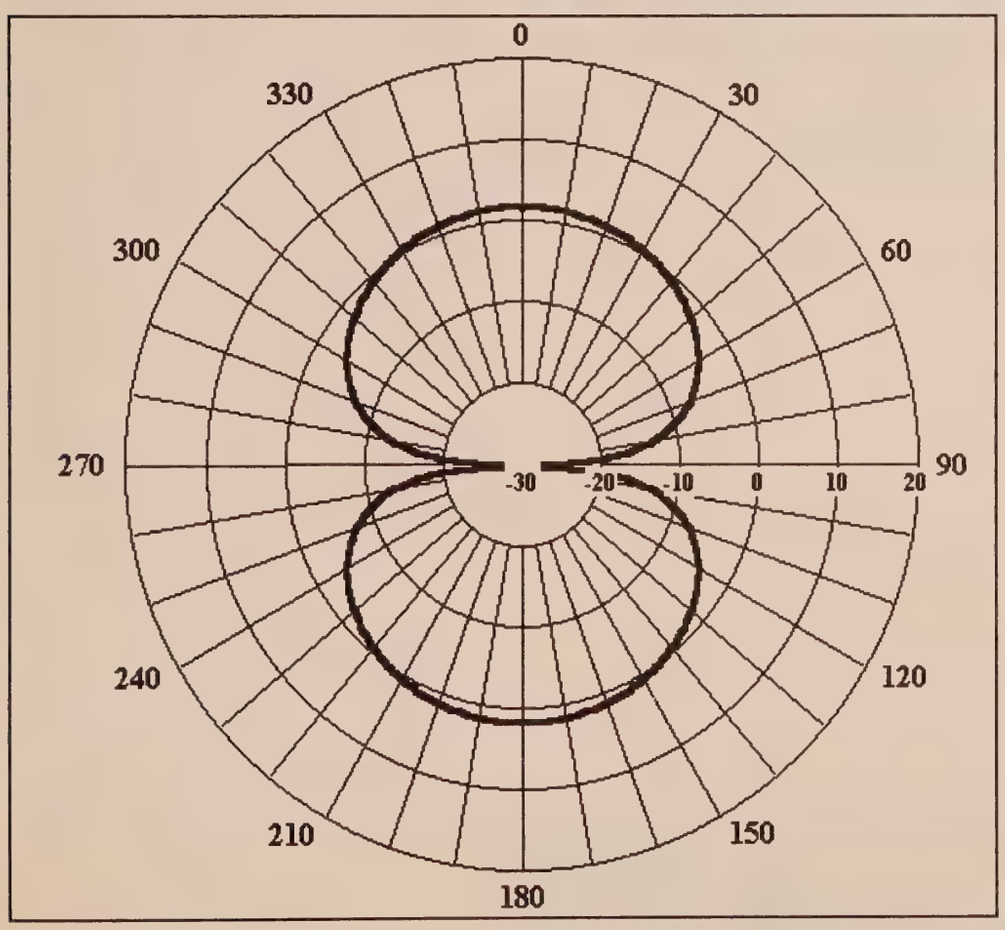

Figure 2. Figure-8 dipole horizontal pattern.

It is absolutely essential that this form of antenna have a good ground. What does that mean? It means a low resistance connection to a good ground system (e.g. eight-foot copper clad steel ground rod) through a very short ground wire made of braid or flashing copper. Unfortunately, that requirement is not always easily met, especially for second-floor installations.

A counterpoise ground is an artificial ground, also called a ground plane, made of quarter wavelength radials (like those used on verticals). The radials are cut to the center of the desired band (Length = 492/FMHz feet). Although the rule is to have as many radials as possible for each band, there are practical limits. Above 15 radials per band, the effectiveness, or rather the marginal return, for each additional radial decreases markedly. The optimum number seems to be two to four radials per band, although just one radial per band will work wonders over a poor earth ground.

Multi-Band Multi-Dipole

The dipole is a half-wavelength wire antenna that is fed in the center with 75-ohm coaxial cable. It is bi-directional, hav-

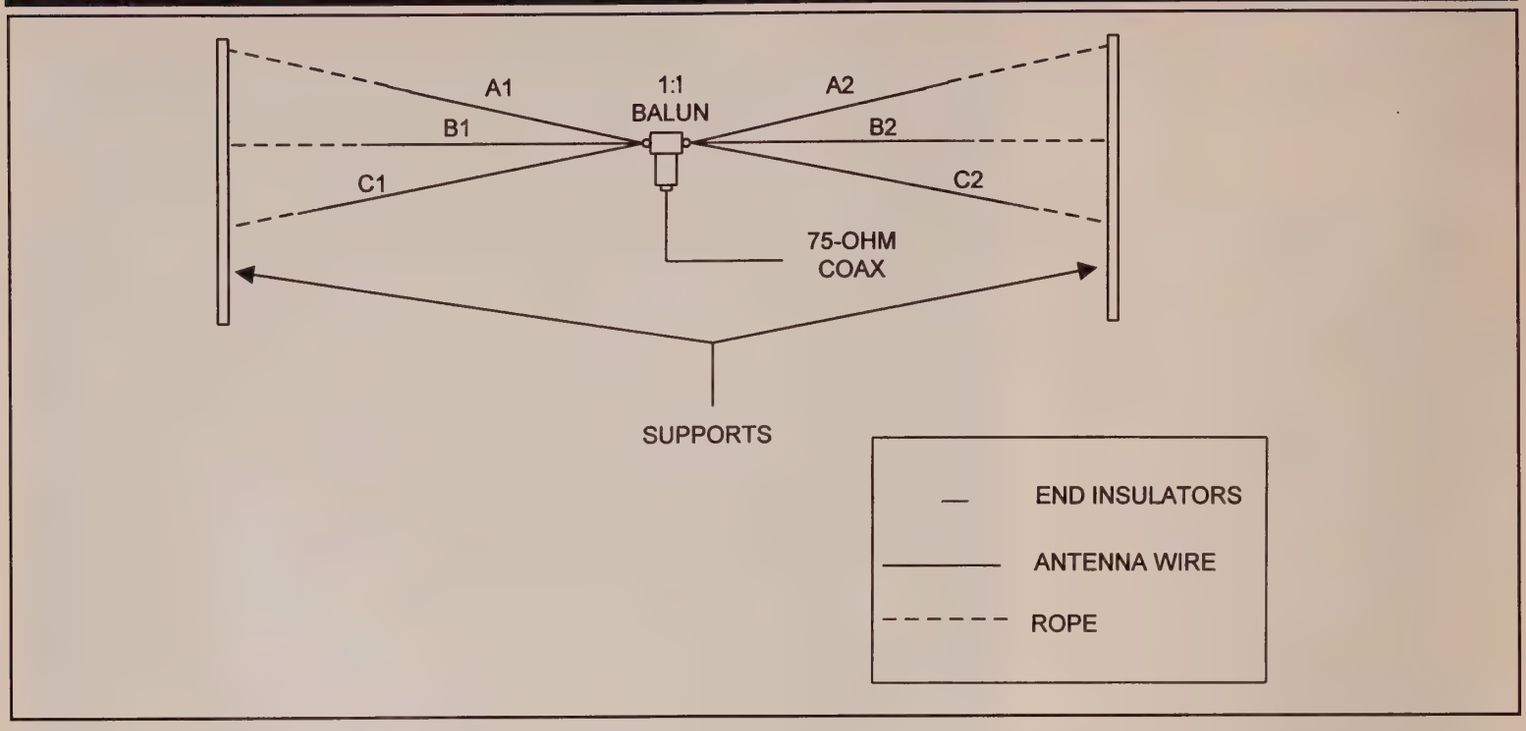

Figure 3. Multi-band dipole antenna.

ing a "figure-8" reception pattern (**Figure 2**), with maximum pick-up broadside to the antenna and the nulls off the ends of the wire. This type of pattern is useful both for increasing the signal level in the direction of reception, but, more importantly, it nulls interfering signals by positioning the nulls in their direction.

The dipole is inherently multi-band, but only at the harmonics of the fundamental resonant frequency. The length (in feet) at the fundamental is 468/FMHz. But that antenna will also work on a frequency *three times the resonant frequency*. For example, as a Novice ham operator (late 1950s), I used a 40-meter dipole on both 40 meters and 15 meters. The pattern at this 3/4 frequency will be a four-lobe "clover leaf" rather than a figure-8.

The dipole has a nominal feedpoint impedance close enough to 75 ohms to

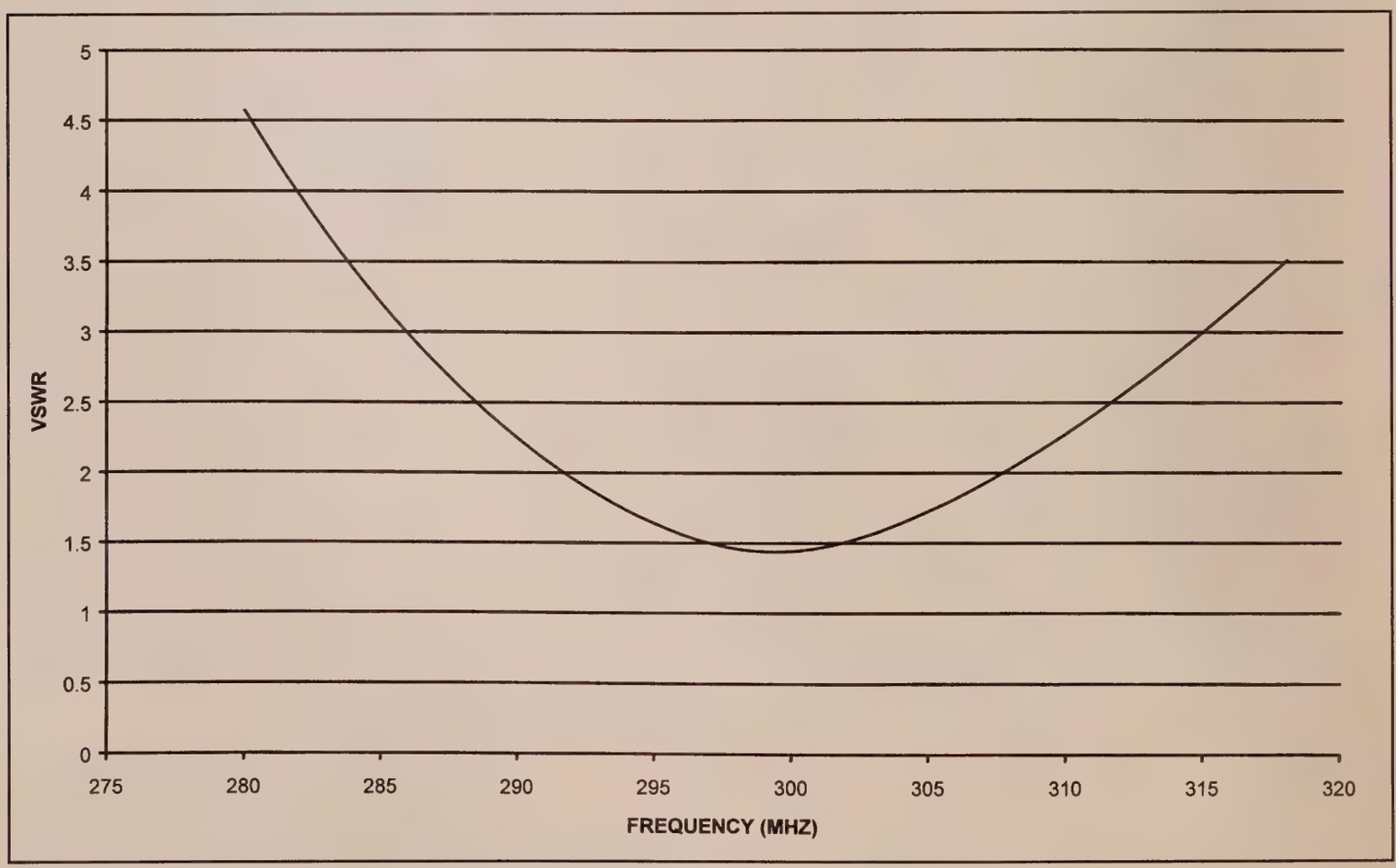

Figure 4. Typical VSWR curve.

30th Anniversary . . .
Congratulations To Joe Carr!

Pop'Comm antennas columnist, Joe Carr, is celebrating his 30th year writing about electronics and radio. Joe's first article, which was about motor noise suppression in mobile rigs, appeared in *QST* magazine in June 1968. The article was submitted on a dare from some fellow students at the Old Dominion University — Joe won the bet. Since then, he has written more than 85 books and 650 articles. Thanks for being part of the team, Joe!

make a good match to that type of coaxial cable. As the frequency departs from the resonant point, however, the impedance climbs dramatically. As a result, we can connect multiple half-wavelength dipoles to the same feedline **(Figure 3)**. The impedances of all the dipoles are in parallel, which reduces the overall impedance seen by the feedline, hence the receiver. However, off-resonance, the impedances are so high that overall impedance decreases a negligible amount.

The multi-band dipole can be constructed in several different ways. Perhaps the most common method is to simply connect multiple dipoles to the same feedpoint and route them at small angles from each other to separate supports (as shown in **Figure 3**). Another option, however, is to use a multi-conductor cable, such as an antenna rotator cable (four or five conductors depending upon the type bought), with each separate conductor cut to a different band. Although I haven't tried it, the use of 14 or 16 conductor computer "ribbon cable" seems to merit investigation in this respect.

One problem with the use of rotator or ribbon cable, however, is that it tends to be small in diameter and not terribly strong. One has to be concerned with the strength of the antenna, especially if it is installed outdoors. Be careful.

Tuning A Dipole

One of the disadvantages of publishing an equation for antenna length is that you will actually take it seriously. For example, the dipole's overall length (in feet), is 468/FMHz, and that looks so darn precise. It isn't, because all formulas are approximations only. Differences in location, wire size, and end insulator characteristics conspire to change the *real* length required. This effect is greater on the higher bands than on the lower bands. At the higher frequencies, an inch or two is a greater percentage of the total.

The best way to tune a dipole is to erect it a bit longer than necessary and then run a VSWR curve **(Figure 4)**. The minimum point is at the resonant frequency. If the resonant point is too low, then shorten the antenna; but if it is too high, you must lengthen the antenna. Because it is easier to shorten than lengthen (cut wires being what they are), I recommend cutting the antenna initially a bit low and then trimming up-band from there. I use an MFJ Enterprises MFJ-259 VSWR analyzer for my antenna work.

Get In Touch

Don't forget to let me know how your antenna construction projects worked out. I'm online at <carrjj@aol.com> or I can be reached through regular U.S. Mail at *Popular Communications*, 76 North Broadway, Hicksville, NY 11801. ■

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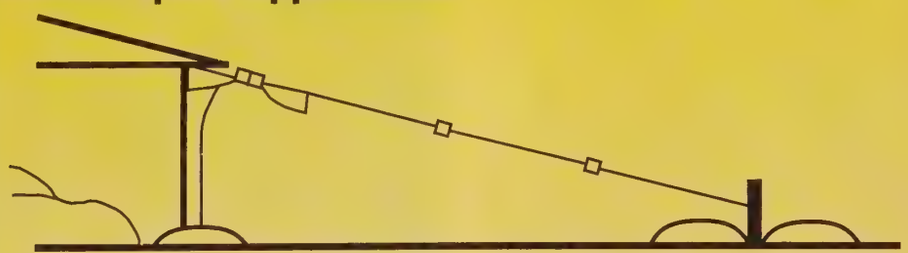

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The Ham Column

BY KIRK KLEINSCHMIDT, NTØZ

GETTING STARTED AS A RADIO AMATEUR

Personal Finance For Ham Radio Success

If I ever win Minnesota's PowerBall Lottery, I'm going to buy at least 50 acres of secluded real estate near the Mississippi River (excellent soil conductivity!) and plant an aluminum forest of 200-foot towers and antennas behind my new home — a new shack with attached living quarters! Two towers will be dedicated to my HF beam antennas: one antenna for each band from 40 to 10 meters. The other towers will hold beams for every VHF and UHF band all the way up through 1296 MHz — including my satellite array. The entire second floor of the house will become my amateur radio station. Computers and rigs of various types will occupy almost every square inch. And on the river itself? Moored at my private marina will float my very own Russian trawler, bristling with antennas.

Who hasn't had the "unlimited cash" ham radio fantasy a time or two? And wouldn't it be great to explore *every* nook and cranny of our vast hobby — with virtually unlimited resources? You'd spend a lifetime doing it, along with a fair amount of greenbacks! Before you commit yourself to new operating modes and new equipment, you'd better take a look in your wallet.

My odds of winning the lottery are understandably slim. Truth be told, I'm on a ham radio budget, much like everyone else. As much as I'd like to pour the assets of the Federal Reserve into my ham radio bank account, other things (such as food, rent, clothes, and truck tires) usually take priority. When it comes to new equipment purchases, each decision requires careful planning and investigating. Can I afford this acquisition without moving to a tent city or a nearby highway overpass? (Some ham purchases *are* worth a brief period of homelessness, right?)

To help newcomers figure expenses, this month's column takes a look at several popular ham activities and offers realistic cost estimates for getting set up in each. These are "from scratch" estimates and averages. As always, your mileage may vary. If you shop and scrounge carefully, you can probably beat these prices by a healthy margin. If your

You don't have to mortgage the homestead or sell family heirlooms to buy amateur radio gear IF you shop wisely!

An antenna farm comes with a price — a high one! If you can manage it, go for the gusto! But if you're on a budget like most of us, you can save lots of money by careful shopping.

cash reserves are more plentiful, you can easily spend three times as much to buy "top-of-the-line" gear.

Figures Are For New Gear!

These figures cover new gear only. If you really want to save cash, look for good used equipment, which can save you as much as 50 percent up front. The art of buying used ham gear is another topic entirely. If you're a newcomer, make sure you have help from experienced buyers.

Some items in the equipment lists show up more than once (a ham transceiver is the ultimate multi-purpose device!), and some items aren't mentioned at all (feedlines, miscellaneous hardware, and so on). These items affect the total price, of course, but they're too numerous to consider here.

Here we go. Cut your credit cards in half and give your checkbook to your mom for safe keeping!

SSB/CW On The HF Bands

A typical entry-level multimode HF transceiver will set you back about $1,600. Additional items may include a triband beam antenna ($450), a multiband dipole antenna ($65), a high-performance vertical antenna ($350), a modest 50-foot tower and rotator ($1,750), and an antenna tuner ($250).

If you demand tower-mounted, high-performance antennas, you can easily sink a large wad of money into a beam, tower, and rotator. If you don't mind the performance trade-off, an antenna tuner and a dipole will serve you nicely — and save you about $2,000.

Another alternative is to try low-power (QRP) operating. QRP transceivers typically cost $200 to $600, and power supply requirements are minimal. Most QRP rigs, however, are CW only, and only a few have multiband capability.

2-Meter FM — Mobile Or Handheld?

A new mobile FM transceiver will set you back about $450, while a decent handheld rig can be purchased for about $350. Mobile and base station antennas weigh in at about $50 to $75 each.

You can cut some corners on antennas here, too. If you're willing to settle for a basic, quarter-wave ground-plane antenna at home, you can buy one for about $20. A quarter-wave mobile antenna with a magnetic base can be yours for only $25. HTs (handheld transceivers) are less expensive than mobile radios. Each has advantages and disadvantages. HTs are convenient and versatile, but they lack the power for reliable, wide-area coverage. Even with a base antenna at home, you may need an amplifier to extend your range — particularly on simplex.

"Shop at hamfests. Amateur radio equipment dealers attend many of the larger hamfests, often offering special prices on new equipment."

On the other hand, mobile rigs lack portable convenience, but they have plenty of power and are usually loaded with additional features.

2-Meter Packet Radio

To the figures quoted above for 2-meter FM operation add $150 for a TNC and $800 for a computer system. Most packet-friendly hams use mobile rigs, but many packeteers use HTs with outstanding results. If you have a node or digipeater nearby, you can even use an HT with a rubber duck antenna! Computer prices change rapidly (usually falling!), so it's difficult to pinpoint an average cost. Enterprising computer shoppers can probably save considerably here.

RTTY/AMTOR/PacTOR On The HF Bands

To the equipment suggested for HF operation, add a computer system ($800) and a multimode communications processor, or MCP ($300), which acts as the middleman between the radio and the computer, translating shifting audio tones into manageable data. Again, you can save a lot of money here by nixing the tower and beam antenna setup in favor of a dipole and an antenna tuner.

SSB And CW On 6 And 2 Meters

Nowadays, your new "HF" transceiver may include 6- and 2-meter coverage; but, if not, a 6- or 2-meter transceiver will run about $600, with beam antennas costing about $150 each. A 150-watt monoband amplifier ($300) and whatever tower/rotator combo you decide on may add to the initial expense.

Serious SSB/CW work on these bands demands a beam antenna — the larger the better. A rotator is also necessary, but a tower is optional. Many weak-signal ops do just fine with roof-mounted arrays. Others take their gear on the road, working contests and activity weekends from hilltops or even skyscrapers.

Smart Shopping

Amateur radio certainly isn't the least expensive hobby on the planet. Even so, you can soften the impact on your bank account by using the following tips:

• Don't be an impulse shopper. You may drool at the first sight of a beautiful piece of equipment, but don't make a hasty decision. Take the time to check with several dealers and find the lowest price. Look in the mail-order catalogs, too. With a little patience, you may save a substantial amount of money.

• Shop at hamfests. Amateur radio equipment dealers attend many of the larger hamfests, often offering special prices on new equipment. If you're in the market for computer hardware, check out the computer shows that pop up from time to time. You'll find some tremendous bargains there.

• Sell your current equipment. There is always a market for good used gear. By selling off some of your older equipment, you can accumulate enough money to take the sting out of a new purchase.

• Don't buy more than you need. When you're evaluating equipment, beware of the "bells-and-whistles" syndrome. It's easy to be captivated by a 2-meter FM radio that includes every feature known to mankind. But think for a moment. Do you need dozens of programmable memories? Do you need paging capability? Do you need to receive out-of-band signals? If the answer is "no," look for a less expensive, less feature-packed radio.

Your QSL cards, letters, shack photos, and questions about ham radio are always welcome. Contact me at *Popular Communications*, 76 North Broadway, Hicksville, NY 11801. ■

Scanning The Globe

BY CHUCK GYSI, N2DUP
<SCAN911@AOL.COM.

MONITORING THE 30 TO 900-MHz "ACTION" BANDS

Summer Is Just Around The Corner!

It's not too early to get ready for summer scanning. If you're planning to travel this summer, get your frequency lists ready now. It's better to be prepared well in advance instead of looking around for information hours before you're ready to leave home.

For the most part, most frequencies you'll need for your trip can be obtained from local frequency directories. *Police Call* is published in nine regional directories for all states as well as Puerto Rico. Your local RadioShack store can order these directories for other areas. You also may want to obtain other regional directories that might be available for your area (check advertisers in *Pop'Comm*) or even *Monitor America*, which lists frequencies for all states as well as most metropolitan areas. *Monitor America* is available by calling 800-SCAN-701 or sending e-mail to <ScanMaster@aol.com>.

Perhaps there is a regional scanner club in the area you plan to visit. By writing to the club or its newsletter's various local editors, you might obtain some additional help. And, if you're already a member of a scanner club, the club newsletter's editor might be able to help by directing you to a club in the area you plan to visit. Just be sure to enclose a self-addressed, stamped envelope when you write to clubs or their editors.

There are also CD-ROM frequency lists that are available for computer users. These are good because you can search for licensees by town or county in the areas you plan to visit. And, if you carry a laptop computer, you can search the CD-ROM for frequencies for your scanner as you're tooling down the highway. CD-ROM data comes from Federal Communications Commission files and will show all two-way radio licensees in an area you desire. Sort through the list and make notes about frequencies that might look interesting: police, fire, emergency services, amusement parks, shopping malls, etc.

Instead of waiting until the night before you plan to leave, program your scanners several nights beforehand. You'll have plenty of other things to do on the night before you leave. Once you get to your destination, turn the scanner on and start finding out what frequencies are active. If you don't feel like keeping notes on the active frequencies, here's a trick I do: If the scanner I'm using has the capability to put delay on individual channels, I turn on the delay function on frequencies I find active. When I return home and have time, I jot down the channels that I installed the delay function on, noting that they were active frequencies worth monitoring during a return trip. I then put that list in a file folder that I can pull out for a return trip.

Frequency Finding

Bill Bartilus of City of Commerce, California, says he recently purchased a scanner and a frequency directory for his area. He asks for more information concerning the use of his scanner and available frequencies.

First, by buying a scanner directory, you've made a good move. Program in frequencies for your area that are listed in the directory. Next, to find more frequencies, try using the search function on your scanner to search around active frequencies for your area. For instance, if a lot of police departments use frequencies in the 155-MHz range in your area, try searching from 155 to 156 MHz. You may stumble on secret, unpublished frequencies police use for surveillance, or other frequencies used by surrounding towns or counties.

Search unknown regions with your scanner, too. For instance, there may be no frequencies listed in the directory for your area between 406 and 420 MHz, but that's probably because it's a federal government and military band. If you search through the band, you may hear postal inspectors, drug agents, federal building security, and more. But you won't know what's there unless you search through the band. One trick in searching is to search in 1-MHz increments or less. If you want to be sure to find active frequencies, you have to narrow your search. Give it some time to work, too. As I've been told, patience is the key to finding new frequencies.

News To Us

Jimmy Rogers of Cherry Hill, New Jersey, inquires about where he can find frequencies used by TV news crews in his area . . .

Well, Jimmy, most news crews in the Philadelphia area can be found using frequencies at 450 to 451 and 455 to 456 MHz. If you search those ranges, you'll find most activity. Both ranges are used by TV and radio stations. In fact, while most repeaters use inputs 5 MHz higher in frequency in the 450- to 470-MHz band, nothing prohibits news media from using inputs in the 450-MHz band for a repeater in the 455-MHz band. In fact, in major cities, you'll probably find odd splits for repeater pairs, instead of being exactly 5 MHz apart. For instance, a radio station might have a repeater output on 450.350, but instead of an input on 455.350, it might use 455.150. In addition to the 450- and 455-MHz bands, there are a handful of frequencies from 161.640 to 161.760 that are used similarly, as well as 166.250 and 170.150 outside a 150-mile radius of New York City. Let us know what news media is active in your neighborhood!

Funny Fire Frequency

James McDonald of Watchung, New Jersey, writes to find out why the frequency of 170.150 is used for fire calls in his area, but seems to be a news media frequency in some other areas.

That's a very good observation, James. The frequencies 166.250 and 170.150 may be assigned to fire departments within 150 miles of New York City only. These frequencies are in use primarily in northern New Jersey, Connecticut, and Philadelphia. The Philadelphia Fire Department is the biggest user of the two frequencies; it uses 166.250 as a repeater

input frequency for repeaters on 170.150. The system is used there for rescue and paramedic service.

However, in the rest of the nation, radio and TV stations get to use 166.250 and 170.150 for remote broadcasts. In many areas, a station may use both of the frequencies in one way or another.

The use of those frequencies may be in conjunction with channels in the 161-MHz band (161.640, 161.670, 161.700, 161.730, and 161.760) where stations also may be licensed. For instance, in one area where I lived, a radio station uses 166.250 for the actual remote broadcasts, but uses 161-MHz channels for cuing on that system.

Amplify It

From Des Moines, Iowa, Charlie Bowers e-mails with a question about antennas for scanners. He wonders how well an amplifier connected to a good scanner antenna would work to pick up signals from 60 miles away. Charlie says that signals tend to come and go at night. He likes to listen to communications from other areas. He says he bought a discone antenna, but that it seems to do as well as the small whip antennas that came with the scanner.

The reason the discone antenna doesn't perform the way you want it to, Charlie, is because it has no gain. It has no capability of amplifying the signal after it's received. Discone antennas are designed to cover a very large frequency range (typically 50 to 900 MHz), but they don't offer any gain. Other scanner antennas are designed to cover specific bands, usually 30 to 50, 150 to 174, 406 to 512, and sometimes 806 to 960 MHz and offer gain on those bands.

If you want to try to give your discone some gain, try purchasing a TV amplifier. These TV amplifiers, which install in the line with your coax, usually offer gain for 50- to 900-MHz signals. That's basically all the TV channels, but it also will work for scanners because most of your listening will be in that segment. The amplifier may help you hear signals that were previously only static! Give it a try and see how signals improve.

Another thought is that those signals that come and go may now be received as a result of atmospheric conditions. You may be receiving some of the signals when a warm-air inversion or ducting occurs. This is when the signals travel

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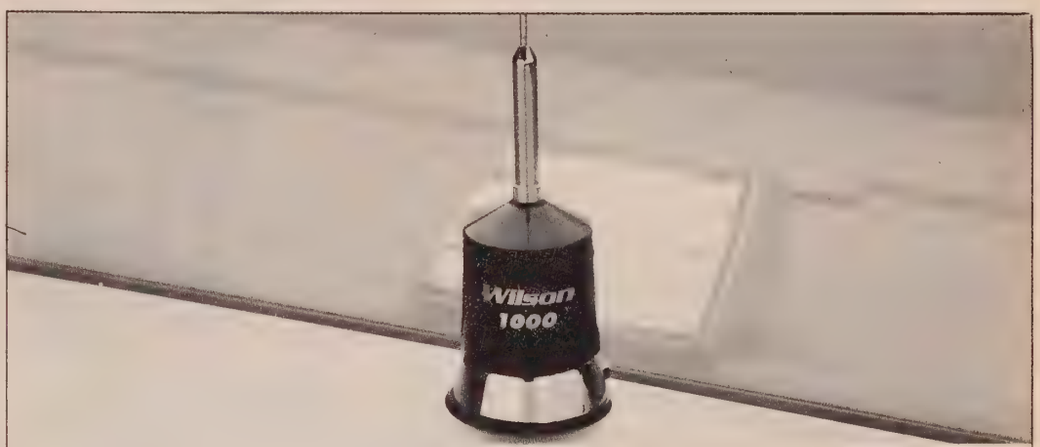

World's Most Powerful CB and Amateur Mobile Antenna*

Lockheed Corp. Test Shows *Wilson 1000* CB Antenna Has 58% More Gain Than The K40 Antenna (on channel 40).

In tests conducted by Lockheed Corporation, one of the world's largest Aerospace Companies, at their Rye Canyon Laboratory and Antenna Test Range, the Wilson 1000 was found to have 58% more power gain than the K40 Electronics Company, K40 CB Antenna. This means that the Wilson 1000 gives you 58% more gain on both transmit and receive. Now you can instantly increase your operating range by using a Wilson 1000.

***Lockheed** - California Company*
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Burbank, California 91520

Wilson Antenna Company Inc.
3 Sunset Way Unit A-10
Green Valley Commerce Center
Henderson, Nevada 89015

Subject: Comparative Gain Testing of Citizen's Band Antennas
Ref: Rye Canyon Antenna Lab File #870529

We have completed relative gain measurements of your model 1000 antenna using the K-40 antenna as the reference. The test was conducted with the antennas mounted on a 16' ground plane with a separation of greater than 300' between the transmit and test antennas. The antennas were tuned by the standard VSWR method. The results of the test are tabulated below:

FREQUENCY (MHZ)	RELATIVE GAIN (dB)	RELATIVE POWER GAIN (%)
26.965	1.30	35
27.015	1.30	35
27.065	1.45	40
27.115	1.60	45
27.165	1.50	41
27.215	1.60	45
27.265	1.75	50
27.315	1.95	57
27.365	2.00	58
27.405	2.00	58

58% MORE POWER GAIN THAN THE K40

Individual test results may vary upon actual use.

Guaranteed To Transmit and Receive Farther Than Any Other Mobile CB Antenna or Your Money Back
New Design

The Wilson 1000 higher gain performance is a result of new design developments that bring you the most powerful CB base loaded antenna available.

Why Wilson 1000 Performs Better

Many CB antennas lose more than 50% of the power put into them. The power is wasted as heat loss in the plastic inside the coil form and not radiated as radio waves.

We have designed a new coil form which suspends the coil in air and still retains the rigidity needed for support. This new design eliminates 95% of the dielectric losses. We feel that this new design is so unique that we have filed a patent application on it.

In addition, we use 10 Ga. silver plated wire to reduce resistive losses to a minimum.

In order to handle higher power for amateur use, we used the more efficient direct coupling method of matching, rather than the lossy capacitor coupling. With this method the Wilson 1000 will handle 3000 watts of power.

The Best You Can Buy

So far you have read about why the Wilson 1000 performs better, but it is also one of the most rugged antennas you can buy. It is made from high impact thermoplastics with ultraviolet protection. The threaded body mount and coil threads are stainless steel; the whip is tapered 17-7 ph. stainless steel. All of these reasons are why it is the best CB antenna on the market today, and we guarantee to you that it will outperform any CB antenna (K40, Formula 1, you name it) or your money back!

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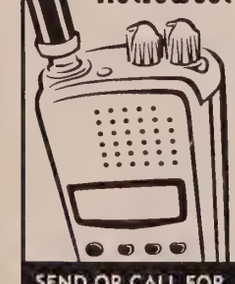
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through a "duct" from their point of origin to your location. It's a situation that occurs frequently in many areas. The signals even have a tendency to travel further over water.

Frequency Helper

Mitch Bennett of Manchester, New Hampshire, says he's been scanning ever since he purchased a Realistic PRO-2004 scanner from RadioShack. Mitch notes that RadioShack has helped him a great deal with starting his scanning adventure. He says his local store has a free listing of local frequencies.

In fact, many RadioShack stores and other scanner shops maintain a local listing of frequencies that can be obtained on a handout flier just for requesting it. If you're traveling, it doesn't hurt to stop in a local shop to see if they can help you find local frequencies. Mitch said that RadioShack's listing helped him identify many frequencies he likes to monitor. He goes on to say that there are many more frequencies he likes to monitor, but he can't identify them. He recently purchased *Police Call* and notes that it's an excellent book, and that it truly makes scanning interesting. However, he wants to know how he can identify the source of new frequencies.

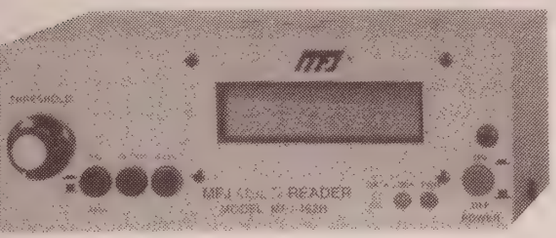
First, Mitch, be sure to catch some identifier. Quite often in the public safety radio services, call signs are used and you can cross-reference these in the back of *Police Call*. Look under the frequency you are monitoring and see if the call sign — or one very similar — is shown. In some areas, base stations operated by public safety agencies identify just by the last three numbers in their call sign. For instance, an agency may identify its base station as "490" if its call sign is KBS490. You'll have to look through all the stations licensed on that frequency to see whose call sign matches the identifier. You can also try to identify stations by listening to the locations where the units are dispatched. For instance, if you hear a unit responding to an accident on Interstate 80 near Highway 1, that helps narrow down the possible stations if you look for towns located along Interstate 80 in the back of *Police Call* under the respective frequency. Another possibility that might help you is focusing on the names of places within the town where the units are dispatched. By tracking locations you've heard from a particular agency, you may be able to figure out what town you are monitoring.

Write In!

What are your favorite frequencies? Do you have any scanner-related questions? Do you have any listening tips worth passing along to your fellow readers? How about sending in a photo of your listening post or antenna farm? Write to: Chuck Gysi, N2DUP, "Scanning the Globe," *Popular Communications*, Box 11, Iowa City, IA 52244-0011, fax to 516-681-2926, or e-mail to <SCAN911@aol.com>. Make sure you indicate in your e-mail that you are writing regarding this column. ■

Tap into secret Shortwave Signals

Turn mysterious signals into exciting text messages with this new MFJ MultiReader™



MFJ-462B **$169.95**

Plug this self-contained MFJ MultiReader™ into your shortwave receiver's earphone jack.

Then *watch* mysterious chrips, whistles and buzzing sounds of RTTY, ASCII, CW and AMTOR(FEC) turn into exciting text messages as they scroll across your easy-to-read LCD display.

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Eavesdrop on the world's press agencies transmitting *unedited* late breaking news in English -- China News in Taiwan, Tanjug Press in Serbia, Iraqui News in Iraq -- all on RTTY.

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MFJ's high performance *phaselock loop* modem consistently gives you solid copy -- even with weak signals buried in noise. New threshold control minimizes noise interference -- greatly improves copy on CW and other modes.

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Super Active Antenna

"World Radio TV Handbook" says MFJ-1024 is a "first rate easy-to-operte active antenna . . . quiet . . . excellent dynamic range . . . good gain . . . low noise . . . broad frequency coverage."

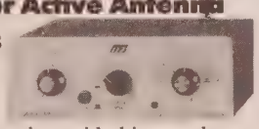
Mount it outdoors away from electrical noise for maximum signal, minimum noise. Covers 50 KHz to 30 MHz.

Receives strong, clear signals from all over the world. 20dB attenuator, gain control, ON LED. Switch two receivers and aux. or active antenna. 6x3x5 in. remote has 54 inch whip, 50 ft. coax. 3x2x4 in. 12 VDC or 110 VAC with MFJ-1312, $12.95.

$129.95 MFJ-1024

Indoor Active Antenna

MFJ-1020B **$79.95**

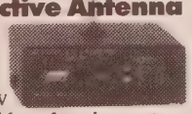


Rival outside long wires with this *tuned* indoor active antenna. *"World Radio TV Handbook"* says MFJ-1020 is a "fine value . . . fair price . . . best offering to date . . . performs very well indeed."

Tuned circuitry minimizes intermod, improves selectivity, reduces noise outside tuned band. Use as preselector with external antenna. Covers 0.3-30 MHz. Has Tune, Band, Gain, On/Off/Bypass Controls. Detachable telescoping whip. 5x2x6 in. Use 9 volt battery, 9-18 VDC or 110 VAC with MFJ-1312, $12.95.

Compact Active Antenna

MFJ-1022 **$39.95**



Plug this new *compact* MFJ all band active antenna into your general coverage receiver and you'll hear strong clear signals from all over the world from 300 KHz to 200 MHz -- including low, medium, shortwave and VHF bands.

Also improves scanner radio reception on VHF high and low bands.

Detachable 20 in. telescoping antenna. 9 volt battery or 110 VAC with MFJ-1312B, $12.95. 3⅛x1¼x4 in.

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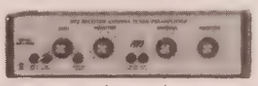

Matches your antenna to your receiver so you get maximum signal and minimum loss.

Preamp with gain control boosts weak stations 10 times. 20 dB attenuator prevents overload. Pushbuttons let you select 2 antennas and 2 receivers. Cover 1.6-30 MHz. 9x2x6 inches. Use 9-18 VDC or 110 VAC with MFJ-1312, $12.95.

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High-gain, high-Q receiver preselector covers 1.8-54 MHz. Boost weak signals 10 times with low noise dual gate MOSFET. Reject out-of-band signals and images with high-Q tuned circuits. Pushbuttons let you select 2 antennas and 2 receivers. Dual coax and phono connectors. Use 9-18VDC or 110 VAC with MFJ-1312, $12.95.

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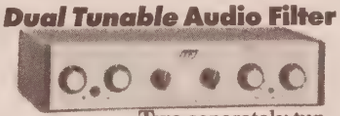

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Two separately tunable filters let you peak desired signals and notch out interference at the same time. You can peak, notch, low or high pass signals to eliminate heterodynes and interference. Plugs between radio and speaker or phones. 10x2x6 in.

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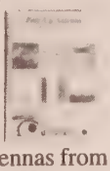

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Mobile Scanner Ant.

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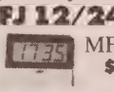

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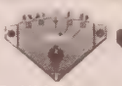
MFJ Antenna Switches

MFJ-1704 **$59.95**



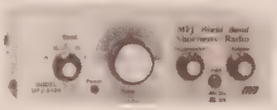
MFJ-1702B **$21.95**

MFJ-1704 heavy duty antenna switch lets you select 4 antennas or ground them for static and lightning protection. Unused antennas automatically grounded. Replaceable lightning surge protection device. Good to 500 MHz. 60 dB isolation at 30 MHz.

MFJ-1702B for 2 antennas.

World Band Radio Kit

MFJ-8100K **$59.95***kit*
MFJ-8100W **$79.95***wired*



Build this *regenerative* shortwave receiver *kit* and listen to shortwave signals from all over the world with just a 10 foot wire antenna.

Has RF stage, vernier reduction drive, smooth regeneration, five bands.

Free MFJ Catalog

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CIRCLE 120 ON READER SERVICE CARD

Pop'Comm's World Band Tuning Tips

May 1998

This listing is designed to help you hear more shortwave broadcasting stations. The list includes a variety of stations, including international broadcasters beaming programs to North America, others to other parts of the world, as well as local and regional shortwave stations. Many of the transmissions listed here are not in English. Your ability to receive these stations will depend on time of day, time of year, your geographic location, highly variable propagation conditions, and the receiving equipment used.

AA, FF, SS, GG, etc. are abbreviations for languages (Arabic, French, Spanish, German). Times given are in UTC, which is five hours ahead of EST, i.e. 0000 UTC equals 7 p.m. EST, 6 p.m. CST, 4 p.m. PST.

UTC	Freq.	Station/Country	Notes
0000	**5770**	**Radio Miskut, Nicaragua**	**SS**
0000	5952	Radio Pio Doce, Bolivia	SS
0000	6250	Radio Nacional-Malabo, Eq.. Guinea	SS
0000	7325	Radio Austria Int'l	GG
0000	12019	Voice of Vietnam	
0030	**4845**	**Radio K'ekchi, Guatemala**	**SS/vern.**
0030	5905	Radio Vilnius, Lithuania	
0045	**9485**	**Radio Bulgaria**	
0100	**5025**	**Radio Rebelde, Cuba**	**SS**
0100	6010	RAI, Italy	
0100	7120	Radio Yugoslavia	
0100	7448	Voice of Greece	Greek
0100	13630	Radio Japan	
0100	15360	BBC Singapore relay	
0100	15575	Radio Korea Int'l, S. Korea	SS
0130	**9615**	**Radio Cultura, Brazil**	**PP**
0130	9725	Adventist World Radio, Costa Rica	SS
0130	9730	Sri Lanka Broadcasting Corp.	
0150	**9640**	**Deutsche Welle, Germany**	
0200	**5940**	**Voice of Vietnam via Russia**	
0200	6120	Croatian Radio	
0200	6725	Radio Satelite, Peru	SS
0200	7746	Radio Cristal, Peru	SS
0230	**3339**	**Radio Altura, Peru**	**SS**
0230	4778	Radio Coatan, Guatemala	SS
0230	4996	Radio Andina, Peru	SS
0230	6010	RAI, Italy	II
0230	7280	Radio Sweden	
0237	**4800**	**Radio Lesotho**	**sign on**
0245	**11710**	**RAE, Argentina**	
0300	**3250**	**Radio Luz y Vida, Honduras**	**SS**
0300	3300	Radio Cultural, Guatemala	
0300	4830	Radio Tachira, Venezuela	SS
0300	4960	Voice of America Sao Tome relay	
0300	5030	Adventist World Radio, Costa Rica	SS
0300	5050	Radio Tanzania	
0300	5840	Croatian Radio	
0300	5940	Voice of Russia	
0300	6095	Vatican Radio	
0300	7105	Voice of Russia	
0300	9674	RAI, Italy	SS
0300	9675	Radio Cancao Nova, Brazil	PP
0300	9690	China Radio Int'l via Spain	
0300	9895	Radio Netherlands via Bonaire	
0300	15115	Radio New Zealand Int'l	
0315	**15230**	**Radio Havana Cuba**	**SS**
0330	**3330**	**Christian Voice, Zambia**	
0330	7155	Radio Sweden	
0330	7200	Radio Omdurman, Sudan	AA
0330	7385	RFPI, Costa Rica	
0330	7520	Radio Moldova Int'l, via Romania	
0330	9705	Radio Mexico Int'l	SS
0330	9745	HCJB, Ecuador	
0330	9830	Radio Havana Cuba	SSB
0330	11787	Radio Iraq Int'l	irreg.
0330	13675	UAE Radio, Dubai	
0330	13770	Radio Pilipinas, Philippines	unid.
0345	**4980**	**Ecos del Torbes, Venezuela**	**SS**
0345	9535	Deutsche Welle, Germany, Portugal relay	
0345	11895	Radio Japan via French Guiana	JJ
0350	**6010**	**Radio Budapest, Hungary**	
0400	**4832**	**Radio Reloj, Costa Rica**	**SS**
0400	5955	Channel Africa, South Africa	
0400	5960	Radio Monte Carlo via Canada	AA
0400	6070	CFRX relay CFRB, Canada	
0400	6100	Radio Tirana, Albania	AA
0400	6135	Swiss Radio Int'l	
0400	6940	Radio Fana, Ethiopia	unid lang
0400	7150	Radio Ukraine Int'l	
0400	7475	RTT Tunisia	AA
0400	9575	Voice of America, Thailand relay	
0400	9625	CBC Northern Quebec Service	vern.
0400	9905	Swiss Radio Int'l	
0405	**7215**	**Trans World Radio, South Africa**	
0430	**6165**	**Radio Netherlands via Bonaire**	
0430	7150	Radio Ukraine Int'l	
0430	7300	Voice of Turkey	
0430	7520	Radio Denmark via Norway	DD

UTC	Freq.	Station/Country	Notes
0430	9730	China Radio Int'l	
0430	15075	All India Radio	
0445	**9570**	**Radio Portugal**	
0445	9590	Radio Netherlands via Bonaire	
0500	**3995**	**Deutsche Welle, Germany**	**GG**
0500	4005	Vatican Radio	II
0500	4890	Radio France Int'l, via Gabon	FF
0500	5047	Radio Togo	FF
0500	6055	Radio Exterior de Espana	
0500	6175	BBC via USA	
0500	7255	Voice of Nigeria	
0500	11905	Radio New Zealand Int'l	
0530	**4905**	**Radiodiffusion National, Chad**	**FF**
0530	6015	Radio Austria Int'l, via Canada	
0530	6110	Radio Japan, via Canada	
0530	9445	Voice of Turkey	TT
0600	**4915**	**Ghana Broadcasting Corp**	
0600	9570	Radio Nigeria, Kaduna	
0600	11900	Channel Africa, South Africa	
0630	**5925**	**Radio France Int'l**	**FF**
0639	**5865**	**HCJB, Ecuador**	**SS**
0645	**4815**	**Radio Burkina, Burkina Faso**	**FF**
0645	6155	Radio Austria Int'l	
0645	6190	Radio Japan	
0700	**5077**	**Caracol Colombia**	**SS**
0700	5100	Radio Liberia	
0700	7265	Sudwestfunk, Germany	GG
0700	9580	Africa Number One, Gabon	FF
0800	**4885**	**Radio Clube do Para, Brazil**	**PP**
0800	5955	Radio Netherlands	DD
0800	9740	Radio Nacional de Paraguay	SS
0830	**5949**	**Guyana Broadcasting Corp.**	
0845	**9700**	**Radio New Zealand Int'l**	
0900	**4919**	**Radio Quito, Ecuador**	**SS**
0900	6150	KNLS, Alaska	RR
0900	9710	Radio Australia	
0915	**7504**	**CPBS, Xi'an, China**	**CC**
0930	**6115**	**Radio Tampa, Japan**	**JJ**
0930	6230	Trans World Radio, Monaco	GG
1000	**6090**	**Radio Esperanza, Chile**	**SS**
1000	9865	KTWR, Guam	
1015	**4780**	**Radio Oriental, Ecuador**	**SS**
1100	**5040**	**La Voz del Upano, Ecuador**	**SS**
1200	**4835**	**Radio Tezulutlan, Guatemala**	**Ss/vern.**
1200	6000	Radio Havana Cuba	SS
1200	6950	China Radio Int'l	
1200	9580	Radio Australia	
1200	11600	Radio France Int'l, via China	
1200	15160	Radio Algiers Int'l, Algeria	
1230	**6020**	**Radio Australia**	
1230	13730	Radio Australia	FF
1230	17575	Radio France Int'l	
1300	**6080**	**Radio Australia**	
1300	9525	Polish Radio	
1300	9715	Radio Taskhent, Uzbekistan	
1300	9985	KHBN, Palau	
1300	15115	HCJB, Ecuador	
1300	15240	Radio Sweden	Swedish
1300	15285	Deutsche Welle, Germany	GG
1300	15340	Radio Havana Cuba	SS
1300	15445	Radiobras, Brazil	
1300	15595	Vatican Radio	II
1330	**15230**	**Broad. Svc of Kingdom of Saudi Arabia**	**AA**
1330	15400	Radio Finland Int'l	
1330	15425	Radio Canada Int'l	
1400	**9630**	**Radio Republik Indonesia**	**II**
1430	**11995**	**Far East Bc. Co., Philippines**	
1500	**5955**	**Radio Taipei Int'l, via WYFR**	
1500	9975	Radio Pyongyang, North Korea	
1500	12055	Radio Norway Int'l	NN
1500	12080	Kol Israel	
1500	15505	Radio Kuwait	AA
1500	15515	Radio France Int'l, via China	FF
1630	**15360**	**Voice of America Botswana relay**	
1700	**11690**	**Radio Jordan**	
1700	11715	Radio Exterior de Espana	SS
1700	15186	Radio Africa, Equatorial Guinea	
1700	15240	Channel Africa, South Africa	
1700	15475	Africa Number One, Gabon	FF
1800	**9740**	**Radio Tirana, Albania**	
1800	11815	Radio Exterior de Espana	SS
1800	15265	Radio Nacional Brazil	
1800	15505	Radio Portugal	PP
1800	21470	BBC via Cyprus relay	
1830	**9500**	**Far East Bc. Assn., Seychelles Is.**	**FF**
1830	11905	Voice of America relay, Morocco	
1830	11935	Broad. Svc of Kingdom of Saudi Arabia	AA
1830	11945	Radio Canada Int'l	RR
1900	**7410**	**All India Radio**	
1900	11810	Deutsche Welle, Germany	
1900	11990	Radio Kuwait	
1900	93880	Voice of Greece	EE/ Greek
1930	**11732**	**Radio Tanzania, Zanzibar**	**AA**
2000	**9022**	**Voice of Islamic Republic of Iran**	
2000	9700	Radio Bulgaria	
2030	7285	Polish Radio	
2030	11740	Qatar Broadcasting Service	AA
2030	17755	Channel Africa, South Africa	
2045	**9735**	**Radio Oman**	**AA**
2100	**17715**	**BBC via USA**	
2145	**11620**	**All India Radio**	
2200	**5975**	**BBC via Antigua**	
2200	6240	Radio Free Asia (unknown site)	EE, others
2200	7135	Radio Tirana, Albania	
2200	9520	Radio Liberty (RFE/RL), Spain	RR
2200	9840	Radio Budapest, Hungary	
2200	9850	Radio Cairo, Egypt	AA
2200	9900	Radio Cairo, Egypt	AA
2200	12025	HCJB, Ecuador	SS
2200	15420	WRNO, New Orleans, LA	
2230	**7210**	**Qatar Broadcasting Service**	**AA**
2230	7345	Radio Prague, Czech Republic	
2230	9460	Voice of Turkey	
2300	5013	Radio Cristal, Dominican Republic	SS
2300	6220	VORGAN, Angola	PP
2300	11775	KSDA, Guam	
2300	11905	Radio Gaucha, Brazil	PP
2300	15330	Radio Marti, USA	SS
2330	6937	Yunan PBS, China	CC
2330	11830	Radio Romania Int'l	
2345	**11870**	**Radio Free Asia (unknown site)**	**CC**

Product Parade

BY HAROLD ORT
AND R.L. SLATTERY

REVIEW OF NEW, INTERESTING AND USEFUL PRODUCTS

Drake Amateur And Shortwave Radio Products Now Available Online

The R.L. Drake Company announces the ability to order amateur and shortwave radio products directly from the company Web site at <http://www.rldrake.com>. Visitors to the Drake Web site have always had the ability to preview the complete line of Drake equipment; all product brochures are presented online along with many owner's manuals.

With Drake's new online ordering, simply select the desired products and complete the order form. Products can be purchased using Discover, Master Card, VISA, or American Express. Orders are normally processed the next working day, and all orders are confirmed by a Drake representative via return phone call or e-mail.

Drake products purchased factory-direct carry the 15-day money back trial. Drake's Marketing Director, Bob Jackson says, "Drake has long been recognized as a leader in high end, high quality consumer communications equipment . . . by bringing online ordering to the consumer, we are reasserting our leadership. Most internet users are visiting the Drake website after hours when they cannot conveniently call the company to place an order. With our Drake online order system, they can place their order immediately, without having to wait until the next business day."

Drake orders can also be mailed or faxed directly to the R.L. Drake Company at 513-743-4510. For additional information, contact the R.L. Drake Company at 230 Industrial Drive, Franklin, OH 45005, phone 513-746-4556.

New RELM MS Series Scanners

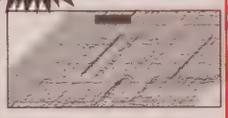
RELM Communications has introduced the MS Series of mobile scanners featuring 800 MHz, scan speed up to 100 channels per second, priority scan, birdie lockout, weather search, LCD backlit display and direct channel access.

Both the new MS 180 and MS 200 scanners come standard with an AC adapter, DC power cord, telescopic antenna and mobile mounting capability. The MS 180 holds 100 channels in 10 banks and covers 12 bands, including aircraft, government, 2-meter ham, high band, UHF, T-band, and 800 MHz. The MS 200 also comes with 10 banks, but peaks with 200 channels and 12 bands, again including 800 MHz. This high-end model boasts PL/CTCSS and DPL/DCS decoding as well as a weather alert fea-

DEDICATED TO THE SCANNING AND SHORTWAVE ENTHUSIAST. WE'RE MORE THAN JUST SOFTWARE!

CAT-5000 — Only $99.95 + S & H

SPECTRUM ANALYSIS ON YOUR PC



- With the addition of AOR's SDU-5000 Spectrum Analyzer and this *NEW* Windows Software any radio that has a 10.7MHz IF output will give you full computer controllable spectrum analysis.
- Plus, with the listed radios below, you can have a complete computerized control of receive frequency, direct frequency readout, and a spectrum bandwidth (variable from 500KHz to 10 MHz).
- Just use your mouse to "arm chair" the controls. Never touch the radio once the software is running.

• AR3000A, (Requires Installation of IF output). • AR5000 • R7000 ICOM • R7100 ICOM • R9000 ICOM • R8500 ICOM • Most ICOMs that support user programmable addresses. (Must have 10.7MHz IF Output)

Features *indicates for above listed radios only

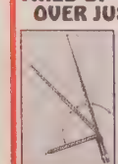
•Variable bandwidth, up to 10.7 MHz.* •Variable Peak Readout. •Instant Readout of Frequency any place on the PC's Display. •Automatic Scanning of programmable ranges (up to 100 available).* •Instant change of center frequency with a simple mouse click. * •Selectable Audio Alert of frequency signal peaks. •Recording of incoming Spectrum data to disk. •Direct (Variable) Threshold readout of all peaks on display. •Playback of Recorded Spectrum data from disk, even without connecting the Radio/SDU!! •Signal Averaging, **PLUS** our exclusive "VARI-COLOR" Analysis. •**THREE** different graphical analysis modes for detailed analysis.

Minimum Requirments

• IBM Compatible PC with 8 meg ram. • Windows 3.1 or later. • 8 meg Hard Drive space.
• AOR SDU-5000 and a radio with 10.7 MHz "IF" output.

CAT-WHISKER

TIRED OF YOUR HANDHELD SCANNER ALWAYS FALLING OVER JUST TO KEEP THE ANTENNA "VERTICAL"?



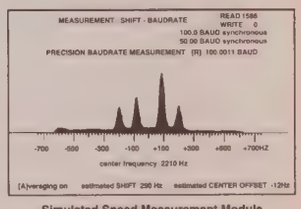
Try our unique, swivel base, telescopic scanner antenna. Our new CAT-WHISKER lets you lay your handheld. scanner on its back and still keep the antenna vertical!
- Swivels to ANY angle.
- Easily adjusts to any length AND frequency.
- Fits ANY scanner with a BNC antenna connector.
- Fits on BACK or TOP mount scanner antennas inputs.

CAT-WHISKER #1 (5 to 23 inches) **$19.95**
CAT-WHISKER #2 (6 to 36 inches) **$24.95**
(plus $2.50 S & H)

HOKA CODE-3 USA Version — See You At Dayton Booth 634

"The Standard Against Which All Future Decoders Will Be Compared"

Many radio amateurs and SWLs are puzzled! Just what are all those strange signals you can hear but not identify on the Short Wave Bands? A few of them such as CW, RTTY, Packet and Amtor you'll know - but what about the many other signals?



Simulated Speed Measurement Module

There are some well known CW/RTTY Decoders but then there is CODE-3. It's up to you to make the choice, but it will be easy once you see CODE-3. CODE-3 has an exclusive auto-classification module that tells YOU what you're listening to AND automatically sets you up to start decoding. No other decoder can do this on ALL the modes listed below - and most more expensive decoders have no means of identifying ANY received signals! Why spend more money for other decoders with FEWER features? CODE-3 works on any IBM-compatible computer with MS-DOS with at least 640kb of RAM, and a CGA monitor. CODE-3 includes software, a complete audio to digital FSK converter with built-in 115V ac power supply, and a RS-232 cable, ready to use.

CODE-3 is the most sophisticated decoder available for ANY amount of money.

26 Modes included in **PROFESSIONAL** package include:

• Morse ★ • RTTY/Baudot/Murray ★ • Sitor CCIR 625/476-4 ARQ - Navtex ★ • AX25 Packet ★ • Facsimile all RPM (up to 16 gray shades at 1024 x 768 pixels ★ • Autospec - Mk's I and II • DUP-ARQ Artrac • Twinplex • ASCII ★ • ARQ6-90/98 • SI-ARQ/ARQ-S • SWED-ARQ-ARQ-SWE • ARQ-E/ARQ1000 Duplex • ARQ-N-ARQ1000 Duplex Variant • ARQ-E3-CCIR519 Variant • POL-ARQ 100 Baud Duplex ARQ • TDM242/ARQ-M2/4-242 • TDM342/ARQ-M2/4 • FEC-A FEC100A/FEC101 • FEC-S • FEC1000 Simplex • Sports info 300 baud ASCII • Hellschreiber-Synch/Asynch ★ • Sitor • RAW (Normal Sitor but without Synch. • ARQ6-70 • Baudot F788N • Pactor ★ • WEFAX ★

EXTRA OPTIONS — REG. PRICE
Piccolo $85.00
Coquelet.....$85.00
4 special ARQ & FEC systems: TORG-10/11, ROU-FEC/ RUM-FEC, HC-ARQ (ICRC) and HNG-FEC.....$115.00
SYNOP decoder $85.00

• All modes in typical baud rates with possibility of changing to any desired value of speed and shift.
• User can save incoming data to disk in either ASCII or raw bit form.

PROFESSIONAL CODE-3 DECODER
$595.00 + S & H
Includes: ALL Modes, Plus Oscilloscope★, ASCII Storage, Auto Classify★, and PACTOR★ Options
with ALL EXTRA OPTIONS $795.00 + S&H

CODE 3 - GOLD VHF/SW DECODER
$425.00 + S & H
includes POCSAG & ACARS Plus ★ Modes/Options
with ALL EXTRA MODES/OPTIONS $595.00 + S&H

ALSO AVAILABLE - HOKA CODE-30 DSP-based Professional Decoder - CALL FOR PRICE

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FREE DEMOS ON THE WEB

Phone/Orders: (318) 687-4444 FAX: (318) 686-0449
Info/Tech Support: (318) 687-2555 (9 am - 1 pm Central M-F)

Toll-Free Orders 888-SCANCAT 888-722-6228

RELM Communication's new MS 180 scanner. (Photo Courtesy RELM Communications)

ture. In addition, an advanced alphanumeric display of up to eight characters makes for simple custom channel ID via optional PC programming software.

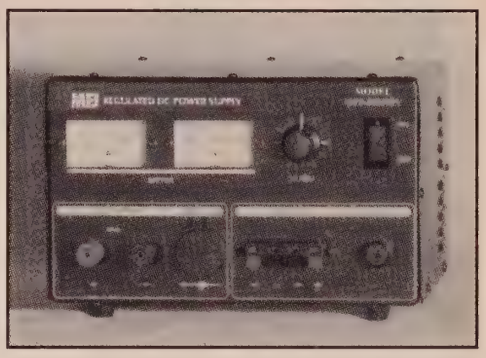
John Biljan, Vice President of Sales and Marketing for RELM Communications said, "The introduction of the MS Series of mobile scanners brings our customers the vision, technology and quality of RELM products coupled with the strong history of the Regency Electronics scanners of the '80s."

The suggested retail price for the MS 180 scanner is $340 and the MS 200 is $408. For additional information, contact RELM Communications at 7505 Technology Drive, West Melbourne, FL 32904 or phone 407-984-1414.

New 35/30 Amp Adjustable Regulated DC Power Supply From MFJ

MFJ Enterprises, Inc. announces their new heavy-duty power supply which features 35 amps surge and 30 amps continuous, and is adjustable and regulated. The MFJ-4035MV voltage is front-panel adjustable from 1 to 14 Vdc. The power supply has lighted front-panel meters and an on/off switch.

The $149.95 power supply features three different output terminals, including a five-way binding post for HF/VHF radio, two pairs of quick connects for low-current accessories, and a cigarette lighter socket for mobile accessories. It has a front-panel fuse holder for convenient fuse replacement. The volt meter and amp meter continuously monitor load, and a quiet internal cooling fan generates airflow, keeping components cool.



The new MFJ-4035MV power supply. (Photo Courtesy MFJ Enterprises, Inc.)

MFJ's new power supply has built-in circuit protection that will automatically shut down the power supply when it is drawing too much current. It also has a convenient 110-Vac input, plugging into your nearest wall outlet. It is protected by MFJ's famous No Matter What™ one-year limited warranty, which means MFJ will repair or replace, at their option, your MFJ-4035MV for one year.

For more information, contact MFJ directly at 800-647-1800 or fax them at 601-323-6551. ■

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NOW SUPPORTS FULL TRUNKING ON UNIDEN BC-895

SCANCAT GOLD for Windows

Since 1989, The Recognized Leader in Computer Control

NOW SUPPORTS ICOM IC-PCR1000

Once you use SCANCAT with YOUR radio, you'll NEVER use your radio again WITHOUT SCANCAT!

SCANCAT supports almost ALL computer controlled radios by: AOR, DRAKE, KENWOOD, ICOM, YAESU and JRC (NRD) Plus PRO-2005/6/35/42 (with OS456/535), Lowe HF-150, and Watkins-Johnson .

SCANCAT'S WINDOWS FEATURES

- Unattended Logging of frequencies
- Scan Create Disk Files.
- Spectrum Analysis to Screen OR Printer.
- Supports PerCon & Mr. Scanner CD Roms.
- LINK up to 100 Disk files or ranges.
- Scan VHF & HF Icom's Simultaneously.
- MULTIPLE search filters for Diskfile Scanning.
- Search by CTCSS & DCS tones with OS456/535 or

All the features you EXPECT from a true Windows application such as:

- UNIQUE database management system with moveable columns. Even SPLIT columns into doubles or triples for easy viewing of ALL important data on one screen.
- Exclusive 'SLIDE RULE' tuner. Click or 'skate' your mouse over our Slide-Tuner to change frequencies effortlessly! OR use our graphical tuning knob.
- VERSATILE "Functional" spectrum analysis. NOT just a "pretty face". Spectrum is held in memory for long term accumulation. Simply "mouse over" to read frequency of spectrum location. "CLICK" to immediately tune your receiver. You can even accumulate a spectrum from scanning DISKFILES of random frequencies!• DIRECT scanning of most DBASE, FOXPRO, ACCESS, BTRIEVE files WITHOUT "importing".

SCANCAT GOLD FOR WINDOWS.....$99.95 + S & H* UPGRADE from any version.....$29.95 + S & H*

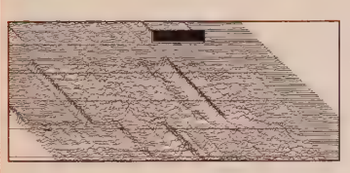
*$5 U.S. $7.50 FOREIGN

See You At Dayton Booth 634

SCANCAT GOLD FOR WINDOWS "SE"

ADDITIONAL FEATURES

- Selective Sound Recording using PC-compatible sound card. "Point & Shoot" playback by individual hits.
- Demographic search for frequency co-ordination and 2-way Usage Analysis.
- Detailed logging to ASCII type files with DATE, TIME, Sig Str, Air Time.
- UNLIMITED file sizes with our exclusive SCANCAT filing method.
- Exclusive "MACRO" control by frequency of Dwell, Hang, Resume. Sig. Treshhold and even 6 separate programmable, audible alarms.
- Command line options for TIMED ON/OFF (Unattended) logging/searches.
- Run as many as 6 different CI-V addressable radios as "Master/Slave.



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The Old CB Shack

BY DON PATRICK

GIVING LIFE TO YESTERDAY'S RELICS

Finishing The Johnson Messenger I, II, and 223 CBs

In January, we discussed the merits, weaknesses and similarities between three of the most popular CB radios ever manufactured: The Messenger I, II, and 223 by the E.F. Johnson Company. Continuing into the March issue, we covered some tips and modifications and then began the full alignment of the Messenger I transmitter and receiver.

This month, we'll finish up the three-part series with the Messenger II and 223 units. You'll need to refer back to one of the prior issues for some of the figures we'll use at various points since space doesn't allow for a full repeat of these items (if needed, the back issues are available for $4 each, postpaid from *Pop'Comm*'s Hicksville address).

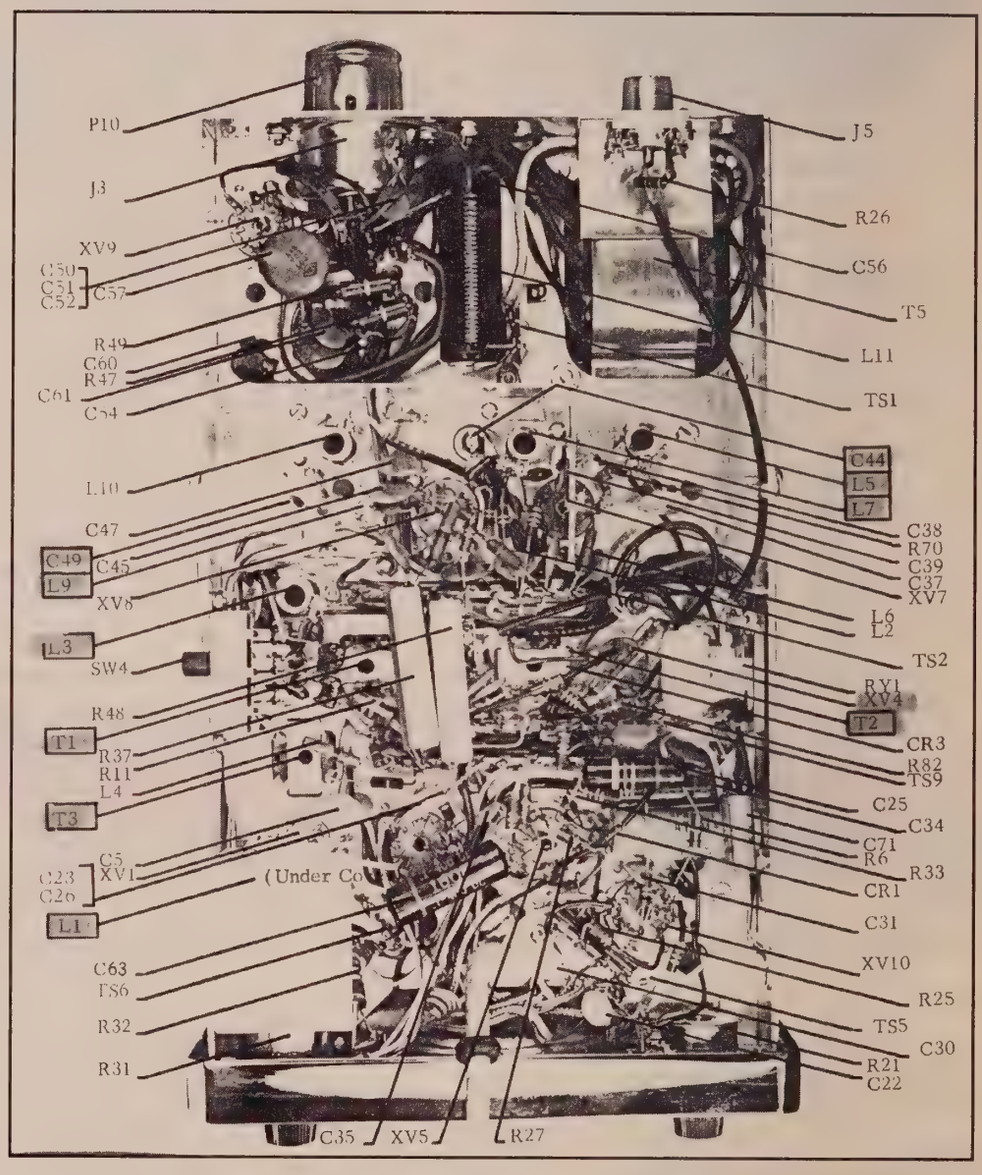

Figure 1. Bottom view of the Messenger II.

Those Old Crystals

You can get crystals from a number of companies. We use International Crystal Co. (ICM) in Oklahoma City, Oklahoma.

The transmitter crystal is a type 1U-SR and the receiver crystal is a 2U-SR for the Messenger I and II units. If you have a bad crystal in the 223 crystal bank, ICM can provide a replacement. While a top-notch technician could find a switch to modify the 223 from a 23-channel synthesizer to a 40-channel one, then add crystals to make it a 40-channel unit, it would be expensive and not worth the trouble. However, if you only operated on channels 20 through 40 or mainly used channels 35 through 40 (or some other small number on the upper 17 channels), they could be added by changing one or two crystals. You would have to sacrifice an equal number of the lower 23 channels. I will be glad to advise you or your technician on what to change if you need help.

Transmitter tubes V-7 and V-8 for 117 Vac and 12 Vdc use (Messenger I model 242-128 and Messenger II model 242-163) have been getting harder to find. You can replace one or both with the tube type used in the 6-volt DC models with very minor filament circuit changes. Instead of a 7054/8077 for V-7, you can plug in a 12BY7. All you have to do is be sure nothing (no wires or parts) is connected to pin No. 6 of that tube socket. If anything is connected to pin No. 6, remove all of it so pin No. 6 is "clean."

Leave whatever was attached to pin No. 6 connected together and taped out of the way. Now V-7 will work with either a 7054, 8077, or 12BY7 plugged in the socket. For V-8, a 6CM6 can be used in place of a 7061 if you add a resistor in series with the filament wire going to pin No. 5 of that tube socket. Take the wire off pin No. 5 and solder a 15-ohm, 10-watt resistor to the pin of that socket. Now attach the wire you removed from the tube socket to the other end of this resistor. Be sure to tape or heat shrink any exposed bare wire and arrange the resistor so there are no shorts. Also, this resistor will get fairly warm, so position it so it's not touching anything. In the January issue, I gave you the name and address of a good source for tubes of all types, at fair prices: Paul Tucker of Ft. Smith, Arizona.

The Alignment

As we discussed in December, the Messenger I and II are almost identical units. The addition of a second IF stage is the major difference. Therefore, align-

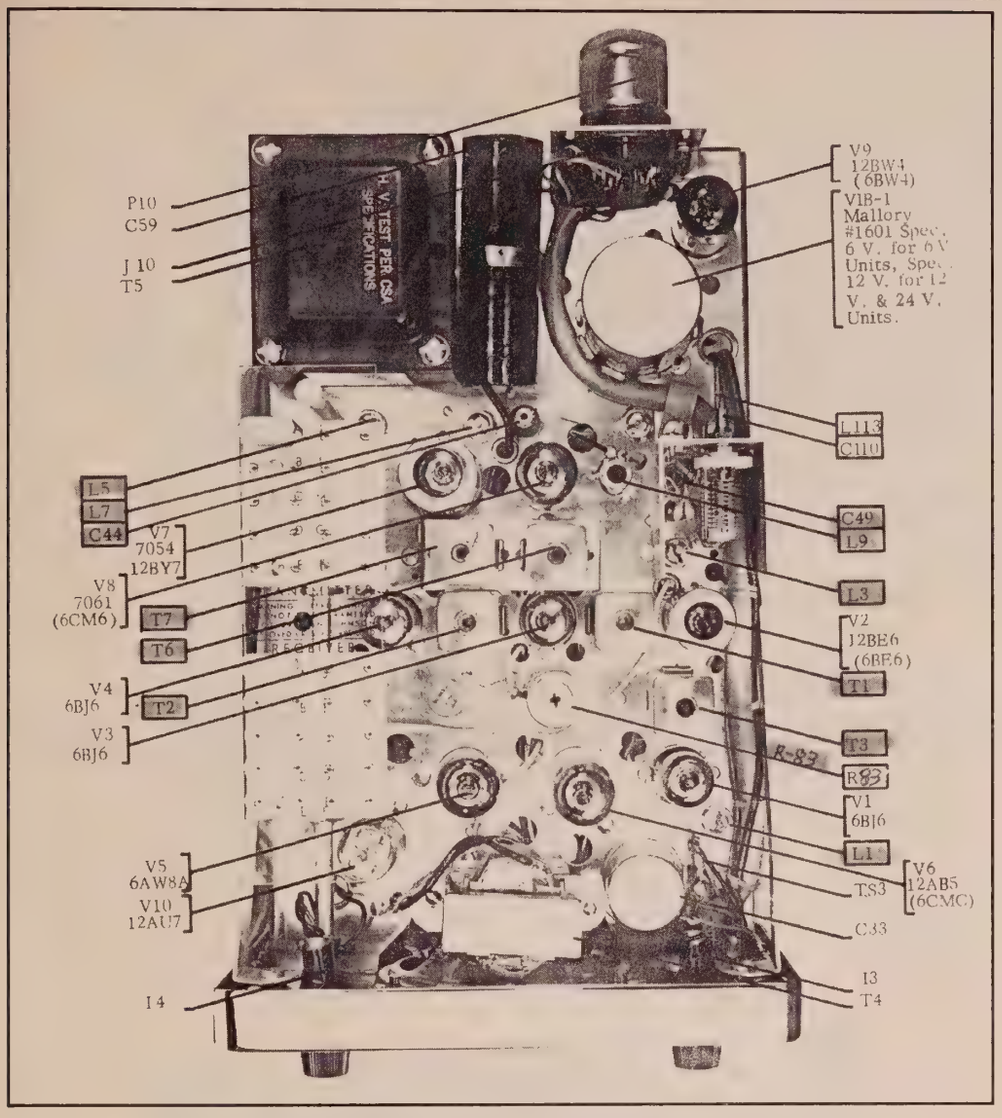

Figure 2: Top view of the Messenger II.

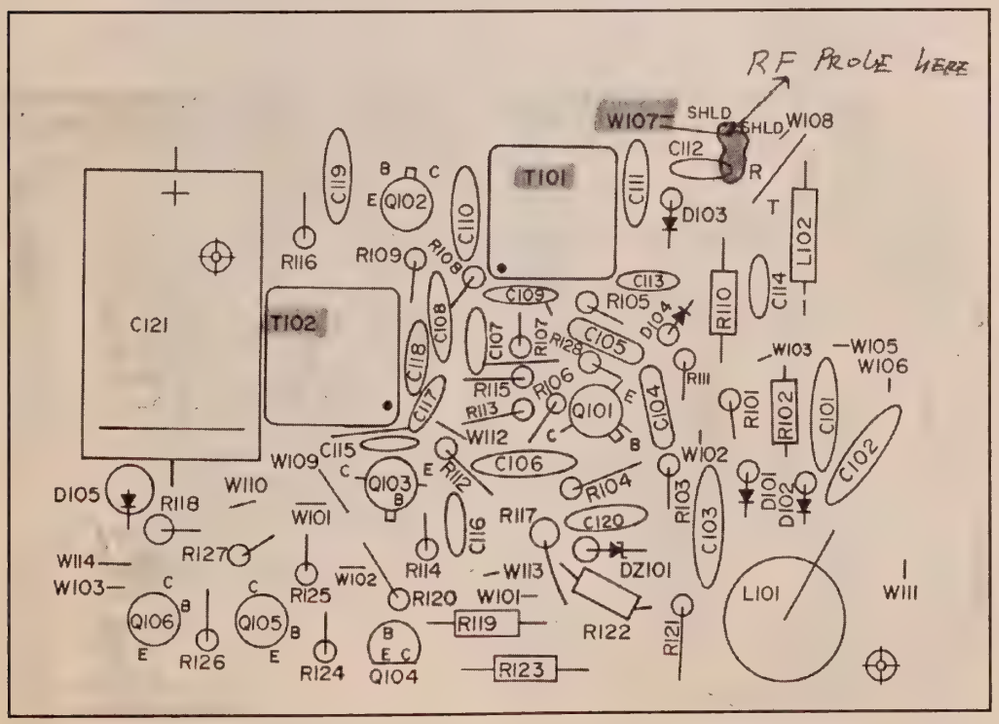

Figure 3a. Bottom view of the alignment and test instrument connection points.

ment is virtually the same with a change in one meter connection location. It's the primary variation over and above tuning two additional transformers. Because the detector and the AVC were changed from a tube (6AL5) to a diode in order to make room for an additional IF amplifier tube, the AVC voltage measurement made by the DC meter is sampled at a different point. Connect the DC meter lead (black, negative meter lead) to terminal No. 2 of T2 (see **Figure 1**). The positive or red lead goes to chassis ground. Adjust R-83 (**Figure 2**) for maximum gain (fully clockwise). Connect the AC meter and signal generator as instructed for the Messenger I, except connect the signal generator through a .01 µF capacitor to pin No. 1 of XV4. Adjust the top cores in all four IF transformers (T-2, T-7, T-6, and T-1) flush with the top of the can. Adjust the bottom core of T-2 for maximum audio on the AC meter. Now adjust the top core of T-2 for maximum audio. NOTE: Tune each core only once and don't re-adjust it once you've peaked and moved away from it. Also, on T-6 and T-7, both top and bottom cores must be tuned from the top due to the way they are mounted.

Reduce the generator output as needed to keep the reading on the DC meter near 1.5 volts. Move the signal generator lead to pin No. 1 of XV3, and adjust the bottom core and then the top core of T-7 as you did for T-2. Now adjust the two cores (bottom one first) on T-6 as you did for T-7. Then move the signal generator to pin No. 1 of XV2 and tune T-1 as before. This completes the IF alignment. You follow the RF tuning procedures we gave in the March issue, step for step, for the receiver front end. The only additional step is that once you've completed the receiver RF (front end) tuning, adjust the signal generator output level to .5 microvolts on one of your middle channels. With the DC meter connected as it was for the RF tuning (to terminal No. 2 of T-2), read the AVC voltage. If it exceeds 1.5 volts, adjust R-83 to bring it down to 1.5 volts. Likewise, use the Messenger I procedures in our March issue for the transmitter tune-up, as they are identical. This completes the full alignment for both the Messenger I and II.

The Messenger 223

Tuning the 223 is no more difficult; for the most part, it's the same as the preceding units. As I've said before, this unit is simply a Messenger I turned sideways with a frequency synthesizer replacing

the bank of crystal pairs. It looks different until you remove the cover and compare the two units. Therefore, to tune the 223, you proceed just as if it were a Messenger II when tuning the IF stages. The meters are all connected the same way and to the same points. (**Figure 3a**). Follow the same procedures step by step. Then revert back to the alignment instructions and meter connections for the Messenger I to tune the receiver RF stages and to tune the transmitter stages. The only additional steps or changes are that you replace adjusting the crystal frequencies with tuning up the synthesizer (**Figures 3** and **4**).

You need one additional piece of test equipment that you have not needed with the other units: an RF voltmeter or a high-resistance input DC meter with an RF probe. Connect the RF probe across the coax (point W107) on the synthesizer board (**Figure 3**). Set the channel selector to channel 23 and tune T-102 until you get a reading using a real low scale. You might have one without any tuning. Once you get a reading, slowly back out the core of T-102 toward the top of the can until you lose the reading. This should happen suddenly as the oscillator stops. Then, slowly adjust the core of T-102 back into the can until it starts again, then do exactly one-quarter turn more inward. Stop, leaving it there!

Now set the channel selector to channel 12 and leave the RF probe connected to the coax. Adjust T-101 (**Figure 3**) and L-3 (**Figure 5**) for a maximum reading on the RF voltmeter. CAUTION: In case someone had mis-tuned T-101, you might want to check, ensuring you are tuned to the "outside peaks." These are the ones that each core will tune near the top and bottom of the can, respectively. If either core is too far inside, you can tune to a false peak. Once you finish with L-3, you've completed the alignment of the 223. That's all there is to fully aligning a Messenger 223!

Those Crystals

You can obtain any of the 40 channel transmit and receive crystals for the Messenger I or II from a crystal manufacturer. I haven't purchased and installed both channel 1 and 40 in the same unit. Due to design, it's possible that you might lose a slight bit of performance at the extreme edges, but it shouldn't be significant. And, due to the synthesizer in the 223, it will be a bit more difficult to add or change channels.

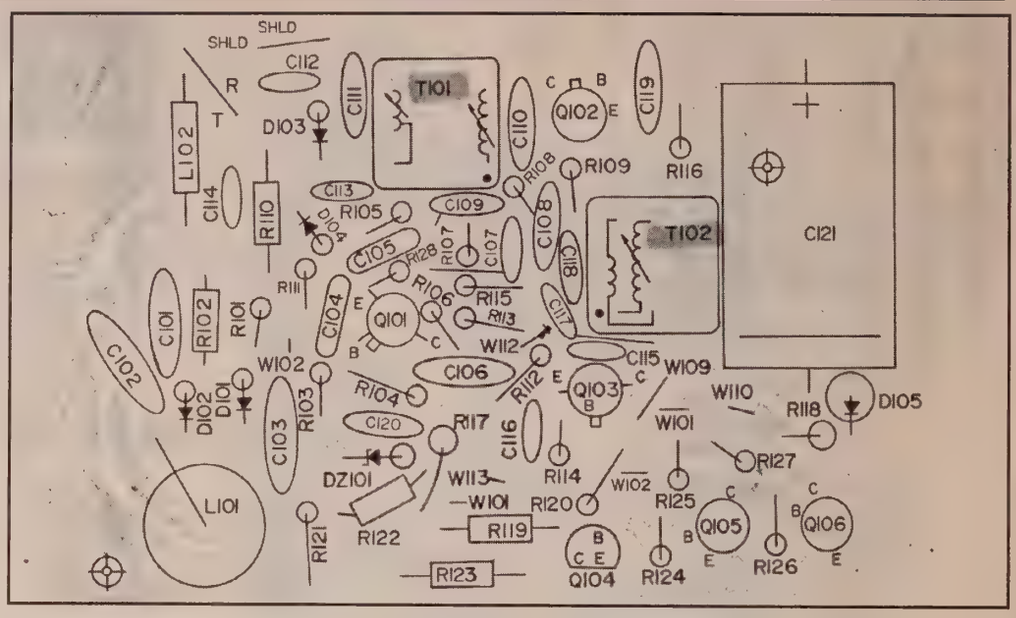

Figure 3. Tuning up the synthesizer.

To add the additional 17 channels and keep the original 23 would require some fancy switching, plus an additional 11 crystals. It can be done, but I don't recommend it unless you've got a lot of time, money, and are a good technician. To pick up a few of the upper 17 channels because a group of operators use them for a special purpose would be reasonable. The only bad part is that you would lose some of the lower 23 to do this (but you can pick which ones you lose).

In the synthesizer, one crystal is used for a group of four channels, such as channel 1, 2, 3, and 4; the next crystal is used for channels 5, 6, 7, and 8, and so

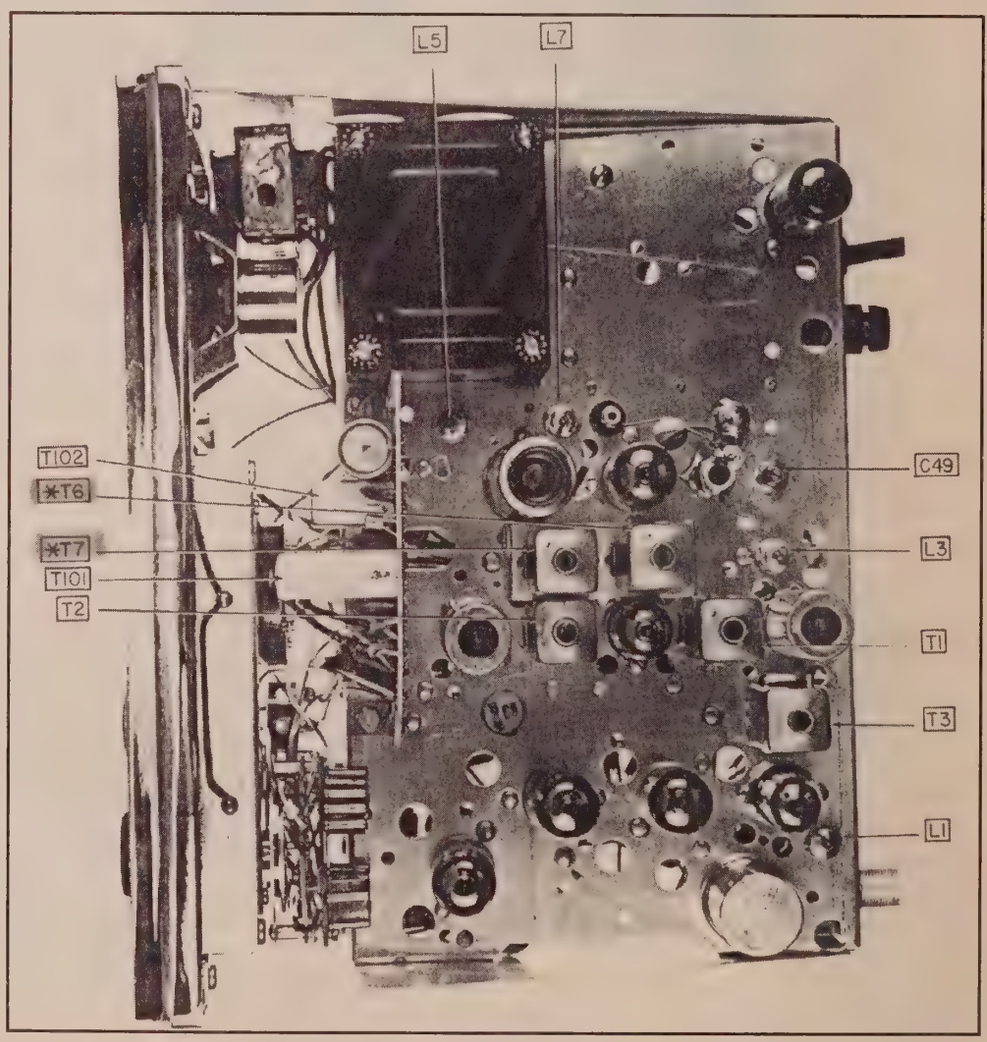

Figure 4. The frequency synthesizer board view from the foil side.

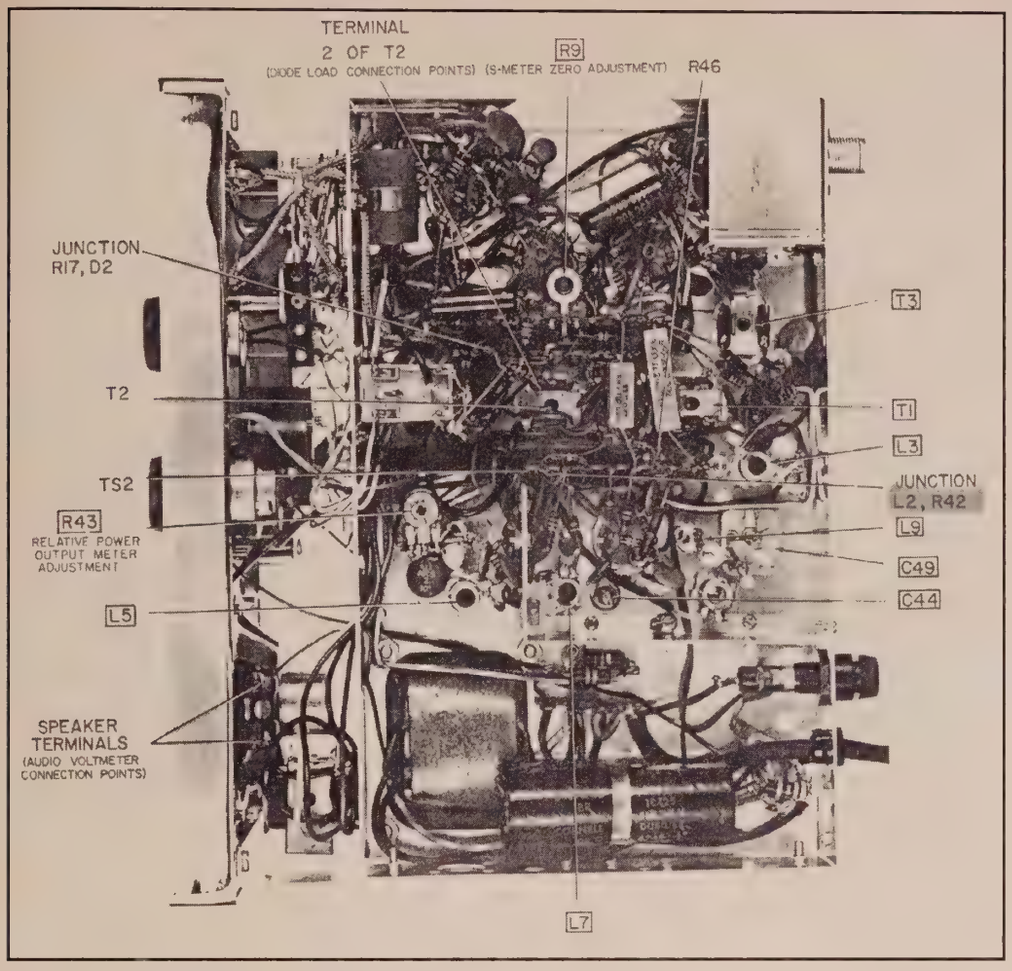

Figure 5. Top view of the alignment points. Both cores must be tuned from the top of the chassis.

on in groups of four up to channel 23. Then, to pick which actual channel is going to be generated, a second crystal is used and "subtracted from the first crystal." Therefore, for channel 1, crystal Y-9 minus crystal Y-5 is used to generate the necessary signal for receive. For channel 2, as you move the selector from position one to two, crystal Y-9 remains in use, but the switch replaces crystal Y-5 with Y-6. After channel 4, crystal Y-9 is replaced with Y-10 and you start over using Y-5, then Y-6, and so forth. In this manner, all 23 channel receive frequencies are generated.

The same procedure is followed for the transmit frequencies, except instead of Y-5, Y-6, and so on, you use crystals Y-1, Y-2, etc. The reason for the change is that the receive frequencies generated are the channel frequency minus 455 kHz, whereas the transmitter frequencies generated are right on the channel.

For those who are interested, here are the actual crystal frequencies used for channel 1 receive and channel 1 transmit: Channel 1 receive is a main crystal of 32.700 (Y-9) minus the channel crystal of 6.190 (Y-5) to make the injector frequency of 26.510 MHz. This is 455 kHz below channel 1 as required. For transmit, the same crystal of 32.700 (Y-9) would be used, but the channel crystal would change to 5.735 (Y-1), and these two would provide a signal of 26.965 MHz for the transmit circuit on channel 1. As you can see, we could change a main crystal and pick up four consecutive channels in the upper 17, but lose four in the lower 23. It's best if you leave the unit "original," but it can be changed if you wish.

Digging In The Mailbag!

One of the more interesting questions received from readers this months is from John K. of Atlanta, Georgia. He writes, "My unit has a bad speaker and I can't find an exact replacement. What should I use?"

John, do you mean an exact physical or electrical replacement? If you can't find one to fit or mount the same as the original, use an external speaker in its own box. But if you're referring to electrical differences, that's a horse of a different color! You've got two specs to consider: impedance and wattage. The wattage rating refers to what level of audio the speaker will withstand without burning out the voice coil. You can use higher, but not lower. So, if your original speaker was rated 3 or 5 watts, you can use one rated for more than either the 3 or 5 watts.

The impedance of the voice coil needs to be really close to original, if not exactly the same. This is more important for transistorized units than for the older tube units. Most CB speakers are either 4-or 8-ohm, although I know of one unit that used a 35-ohm speaker. If the replacement speaker impedance is not correct, you'll have lower audio output, a loss of frequency response, and possible distortion, even causing an audio output transistor or IC to run hot. So be sure to match that one specification and use whatever speaker impedance the unit was designed for originally. Very often that information is available on the schematic or is stamped on the old speaker.

Remember, if you have any questions, write the Oldtimer, Don Patrick, 3701 Old Jenny Lind, Fort Smith, Arizona 72901. Include an SASE for a direct response. You can also e-mail me at <oldestimer @aol.com>. If your question requires you to send a schematic, it's better to write and send an SASE. I'll see you in July with more information on keeping those old CBs alive and on the air. ■

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CB Scene

BY ED BARNAT
<edbarnat@global2000.net>

27-MHz COMMUNICATIONS ACTIVITIES

Cruising On Channel 9 — Yes You Can . . . If You Do It Right!

At last, winter is over, and spring has come. Soon, the long lazy days of summer will arrive. Time to pack a few possessions and a couple companions into one or more vehicles and hit the road. And, oh yes, don't forget to take along a couple of CB radios. They're a great way to keep your convoy together and handle any of those little "emergencies" that can come up along the way.

"But Ed," I hear you say, "The kids will be in the car. You're not actually suggesting I subject them to the noise and vulgarities of channel 19, are you? Besides, my mother-in-law will be riding shotgun in 'Mobile II.' Not being one to hide her feelings, she would probably tangle with some loudmouth and get us all run off the road!"

Well, you are right — about channel 19 anyway. Maybe about your mother-in-law, too, but I really don't know her well enough to say. No, I am not suggesting that you force your traveling companions to endure the nonsense on channel 19. You can if you want, but there are alternatives. Actually, what I have in mind is a quiet little out-of-the-way frequency — one that is seldom used, so you won't have to listen to a lot of superfluous chatter, because chatter is prohibited there. It's a channel that rarely subjects its listeners to vulgarities. Even better, it's one that will occasionally alert you to some problem down the road, like an accident, dangerous driver, or other hazard.

The channel I have in mind is at least as well suited for the traveler as channel 19. In fact, that is its *main* reason for existing — to assist you, the traveler. What channel is it? Well, if you haven't guessed by now, the channel I am talking about is 9.

Channel 9 Is Only For Emergencies — WRONG!

"Are you crazy?" you ask. "What are you trying to do, get my whole family busted by the FCC? We can't possibly travel on channel 9. Everybody knows it's for emergencies only!"

Cobra's 29 WX ST mobile CB includes the seven NOAA weather channels and features instant channel 9 or 19 access at the flick of a switch. (Courtesy Cobra Electronics Corp.)

I hate to argue with you (and at least 90 percent of all CB operators), but you're wrong. The truth about channel 9 is that the common belief that it's for emergencies only is only half of the story. The other part of channel 9's story is that it's for **traveler's assistance**.

Don't take my word for it, check it out for yourself. FCC rules, Part 95, rule 7, paragraph B says "Channel 9 may be used ONLY for emergency communications OR for traveler assistance." Traveler assistance is further defined in rule 18 paragraph C as "communications necessary to assist a traveler to REACH A DESTINATION or to RECEIVE NECESSARY SERVICES." Necessary services is not further defined. It is, however, generally accepted that you, the traveler, get to decide what they are.

Obviously, this is not an invitation to play "Hey Good Buddy" on channel 9. Games like that are best played on channel 19. However, skillful application (yes, both you and your mother-in-law will have to do this skillfully) of this rule, combined with proper channel etiquette and operating technique, can allow both you and the Commission to achieve your respective objectives. You get to keep "Mobile II" from getting lost; the Commission gets to preserve the integrity of the channel.

Here's How It's Done

The rules are few. In fact, there are only two. First, make sure the channel is clear before using it. That means that you have to turn off the squelch, turn up the volume and listen for a minute or two to make sure that the channel isn't in use *before* you key up.

Emergencies — *real* emergencies — can and do happen. Interfering with emergency communications is a crime. Keying over one because "Mom's gotta go" could cost someone their life and earn you a little jail time and/or a hefty fine.

The second, though no less important, is **NO talking**. Any communication that can't be completed on one or two *short* passes should be moved to another channel as quickly as possible. For example, you might get by with an occasional: "Mobile I to Mobile II." "Mobile II."

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"Still there?" "Yup." Anything longer than that should go something like this: "Mobile I to Mobile II." "Mobile II." "Take it up to channel 10."

Tune-Up Tips

This is a good time to point out that all of the above won't be of any value to you if the radios don't work. So, now is a good time to pull them out of the trunk, hook them up, and make sure that they are ready for the trip. OK, so you're a little technically impaired — at least when it comes to coax, connectors, SWR, and the like. Not to worry! There is a great little book that shows you everything — well almost everything — technophobes like you and I could ever need to know. It is the *Screwdriver Expert's Guide To Do It Yourself CB Repairs And Modifications.* While it carries a hefty price tag ($22) for such a small book (93, 8 1/2" x 11" pages), it's packed with good information, and it could pay for itself several times over in reduced repair bills and useless gimmicks and gadgets you don't need to buy. For more information, contact the publisher: CBC International, P.O. Box 31500, Phoenix, Arizona 85046. Their e-mail address is <info@cbcintl.com> and Web site is listed as <http://www.cbcintl.com>.

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Interesting Web Sites

Maybe you aren't cruising the highways and byways. Maybe, you're cruising the Internet. Glenn Torres is. He wrote to ask if I knew of any interesting CB-related Web sites. You're surprised that we CB types are into the Internet? Boy, are you laboring under some heavy-duty misconceptions!

Glenn, there are tons of CB-related sites. Exactly how many really depends on how you define CB and how broad your interests are. Of course, a great place to start is at our *Popular Communications* Web site at <http://www.popcomm.com>. One of the links you'll find there is "CB Radio Resources on the Net." Or, if you wish, go there directly at <http://rob.acol.com/~cb/>. This site is a great jumping off point. In addition to a great set of links, it offers a bulletin board where you can post messages. It also has its own little chat room. You can use it to look for, and schedule, contacts.

If you're interested in what CB is like in Europe, visit my friend Anton Janovich Laukhin from Troitsk in Russia. His address is <http://www.qsl.net/rv3dhc/index.html>. From here, you can learn a lot about CB life on his side of the world where 11-meter Freebanding, FM, and packet are quite popular.

S.608/H.R. 2612 Update

Speaking of the Freeband, should you venture there, what are your chances of hearing hobnailed boots stomping up your driveway and heavy pounding at your door? Well, about the same as always. S.608, a bill pending before the U.S. Senate that would allow local authorities to enforce certain FCC regulations as they pertain to CB, was "Ordered to be reported without amendment favorably" in November, but is still not scheduled for a vote. Its companion bill, in the House of Representatives, H.R.2612, is still being studied by the Subcommittee on Telecommunications, Trade, and Consumer Protection. If you'd like the latest info on the status of these bills, log into <http://thomas.loc.gov/> and search for the bill by number.

Please Try This At Home

Finally, for those of you who get this article early, here is a special treat in the form of a chance to make some unique on-air contacts. Mike Scott, <buzzards@mail.idt.net>, of central New Jersey writes to say that he, and several members of the Buzzards Row Ultralight Club, often use CB radios in their ultralight airplanes. While they use their VHF radios to communicate with airports, they use CB channel 30 for craft-to-craft communications. If you live in or around central New Jersey (including parts of Maryland, Pennsylvania, and New York), you just might catch them in and on the air on any good flying day.

The full-featured Cherokee AH-100 AM/SSB CB walkie-talkie can be configured for mobile operation with a slide-on adapter. It also features instant pushbutton access to channel 9.

Folks elsewhere along the East Coast will have a chance to catch them in mid-April. On April 15, Mike and his friends will be heading to the Sun-N-Fun Fly In at Lakeland, Florida. Traveling along the Atlantic coast, their trip south will take a couple of days. Their return trip will start April 23, and they should arrive back in New Jersey around April 26.

Mike cautions that these little planes are quite noisy, both acoustically and electrically. In addition, they are only using standard rubber duck antennas

mounted on the aircraft's wing. Therefore, most of the time, they run their squelch quite high. So, don't get discouraged if you hear them, but can't get them to respond. Mike assures me that when time and flying conditions permit, they will be squelching down, listening, and looking forward to hearing from you.

They will be flying only during daylight hours. The best time to catch them will be during morning and afternoon drive times. The Ultralights usually fly low and close to the water in order to take advantage of the ground effect. That means that the closer you are to the coast, the better your chances of catching them. However, Mike says that he will occasionally climb to 1,500 feet. At that height, even with the small rubber duck antenna and noisy environment, he might easily be worked over several states! So, be prepared, patient, and persistent. When you get through, remember to tell 'em Ed sent you.

Well, that's it for now. Thanks for writing me here at *Popular Communications*, 76 North Broadway, Hicksville, NY 11801, or via the Internet, where my address is <edbarnat@global2000.net>. And as always, if you can . . . catch me on the radio! 73s.

—Ed

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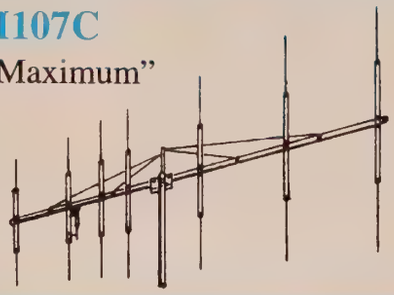

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The CQ Amateur Radio Equipment Buyer's Guide is jam-packed with solid information and great reading. In addition to being an incredible source of insight into the current state of Ham Radio technology, it will continue to be a reliable Ham equipment reference source for many years to come.

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Broadcast DXing

BY BRUCE CONTI
<BAConti@aol.com>

DX, NEWS AND VIEWS OF AM AND FM BROADCASTING

Secrets Of Broadcast QSLing

Unlike shortwave broadcasters who are interested in attracting a global audience, local AM and FM broadcasters are, for the most part, only concerned with the local ratings, and have little or no interest in listeners from outside their coverage area. In addition, transmitter maintenance for most stations is subcontracted, unlike the old days when each station used to have a full-time chief engineer on the staff. And many stations operate with a limited staff; sometimes there are only one or two full-time employees at stations that are 24-hour satellite relays. Thus, obtaining QSL cards or letters verifying reception can be especially challenging for AM and FM broadcast DXers. Here are a few tips.

First, your report should be friendly, polite, and geared toward the non-technical reader. Don't use the SINPO code or abbreviations like QTH and QRM in your report. Radio communications jargon or DX vocabulary words will likely be meaningless to the reader of your report. Use familiar, everyday language to describe your reception and the purpose of the report. Don't use UTC. Instead, *refer to the time at the station location.* Keep in mind that your report will likely be read by someone other than an engineer, such as a business or sales manager, or perhaps the on-air staff. That doesn't mean you should completely exclude technical details. A paragraph describing the specialized equipment used to receive the station, such as a particular communications receiver, loop or wire antennas, and outboard gear will establish a sense of expertise that engineers and non-technical personnel can really appreciate.

The National Radio Club has produced a flyer called "A Broadcasters Guide to DX," which is a brief history and introduction to the hobby that you can include with your report to provide additional background. A photograph of you in your radio shack, or a souvenir postcard from your town or state can also be included to add a personal touch.

Try to establish some relevance to the daily operation of the radio station as a business. Instead of just listing advertisements and program details to verify reception, express a particular interest in an advertisement or local program to make your report more meaningful. Maybe you follow the local baseball team, or you're interested in a community or business event such as a trade show or fair. Suggest that the station can mention your report on the air or use the long distance reception as a sales pitch. For a small station, it might even be newsworthy enough to merit a report in the local newspaper. A meaningful report will increase the chance of receiving a reply.

Again, don't forget to mention the purpose of the report and what you're expecting for a reply. It may even be worth detailing exactly what constitutes verification of reception. Sometimes a prepared reply card that only requires a signature can be used as a last resort, such as in a follow-up report. Don't forget to include return postage. And be courteous. Thank the station for taking the time to read your report and replying. Remember that radio stations are not *required* to respond to QSL requests. It's more than likely that someone has taken time out from a busy day to read your report and reply. For this reason, I also recommend that the report be limited to one page and typewritten so it can be read quickly.

What To Do If You're Low On Luck

Sometimes addressing your report to a person rather than generically to the radio station will generate a reply if previous attempts fail. The three major broadcast DX clubs in North America maintain lists of verification signers or publish QSL reports from members in their news bulletins. The *Broadcasting Yearbook* contains complete information on AM, FM, and TV stations including personnel and addresses. But this is a publication for broadcast industry professionals, reflected in its high price. The *M Street Journal* also has contact and address information, but at a more reasonable price. *The World Radio TV Handbook* includes addresses and personnel for the higher powered AM stations in North America, but may not represent the most recent changes. The National Radio Club's *AM Radio Log* provides up-to-date addresses for all AM stations in the United States and Canada. Addresses and personnel information can also be found via the Internet from stations that maintain their own Web sites.

Sending reports and receiving QSLs via e-mail is a recent trend that seems to be gaining popularity. And the British DX Club's *Radio Stations in the United Kingdom* contains the latest data on AM and FM across the UK, including a separate section covering Ireland. Write to BDXC, 126 Bargery Road, Catford, London SE6 2LR. If you really want to get serious about QSLing, membership in a broadcast DX club is highly recommended. The two major AM radio clubs are The National Radio Club, 2840 S.E. Illinois Ave., Topeka, KS 66605-1427, and the International Radio Club of America, P.O. Box 1831, Perris, CA 92572-1831.

For FM and TV, write to the Worldwide TV-FM DX Association, P.O. Box 514, Buffalo, NY 14205-0514. Remember to include a couple of stamps for return postage when requesting membership information or sample news bulletins, and let them know you read about it in *Popular Communications* magazine.

Finally, once more I must stress the importance of being polite. When writing to a radio station, you are essentially acting as an ambassador, representing all of us who enjoy DXing. One bad report can easily turn a broadcaster against responding to all future reception reports. Report with care and understanding, and you should do well. Good luck and keep us here at *Pop'Comm* updated on your broadcast QSL successes!

Ice Storm Damage Report

The severe northeast ice storm that made national news headlines over the winter, inconveniencing millions of people with the loss of electricity, hit broadcasters especially hard. The mid-winter

storm coated the Montreal, Quebec region, upstate New York, and Maine, knocking many AM and FM radio stations off the air as antenna towers couldn't bear the weight of the accumulating ice. The directional array of CJAD 800 AM in Montreal was completely destroyed. CJAD briefly set up shop on 1410 using the former facilities of CFMB, but found that its highly directional array left many listeners in the dark. So CJAD then moved to 990 via CKGM for improved coverage, while the 800 kHz site was rebuilt.

CBM at 940 AM, Montreal's English language CBC station, was also off the air. But the French language service on CBF 690 AM remained on the air, broadcasting from the same site as CBM. This led to some speculation that CBM made the move to FM. CBM did eventually return to the airwaves at 940. However, a number of CBC AM stations. including CBM. are expected to move to FM later this year.

CFRA, at 580 in Ottawa, was temporarily authorized to broadcast at full power overnight during the emergency. Its signal was widely heard.

In Maine, a number of FMs were silenced by tower collapses, including WLOB, WPOR, WKZS, WJBQ, and WCDQ. The popular rocker WBLM 102.9 was knocked out of service. In the interim, modern rocker WCYY 94.3 became the "radio shelter" with a mix of popular and modern rock to serve fans of each station during the extensive power outage. WJTO 730 and WLAM 870 AM were also off. All but one county in Maine was declared to be in a state of emergency.

Not to make light of what was a serious situation for those who went for days without power, but such widespread power failures and the loss of local radio stations create excellent opportunities for DXing. It's always good to have spare batteries and a portable DX setup ready for emergencies.

X-Band Files In Brief

WPHG is on the air at 1620, making the once elusive state of Alabama now an easy target. This gospel music station is now being heard throughout North America, despite the number of low power TIS stations on 1620.

Radio Aahs Worldwide is history. The shareholders of Children's Broadcasting approved the sale of the network's radio stations, including WJDM at 1660 in New Jersey. Completion of the sale marked the end of Radio Aahs, as the company decided to concentrate on syndicated children's programs. As of this writing, WJDM was broadcasting commercial-free R & B music at 1660.

Loggings

From Patrick Griffith in Colorado, Patrick Martin in Oregon, Lee Silvi in Ohio, and some notes out of my own logbook at various New England listening posts . . .

990 CJAD, Montreal, PQ, at 0105 UTC with ID after news, "The frequency for now is 990; you're listening to CJAD News-Talk 800." (Conti)

1040 WJHR, Flemington, NJ, new station on the air, heard at 0230 UTC with ID as "New Jersey's Hometown Radio" and oldies music. (Conti)

1179 SWEDEN, Solvesborg, heard at 2130 UTC in English with ID for 1179 medium wave and FM to greater Stockholm, and "Spectrum On The Arts" program. (Conti)

1386 RUSSIA, V.O. Russia, Kaliningrad, at 2300 UTC with relay of United Christian Broadcasters gospel music program in English from the UK. (Conti)

1620 WPHG, Atmore, AL, at 0330 UTC with old-time gospel music (Conti). At 1300 UTC with USA Radio news (Griffith). USA Network news for five minutes on the hour usually followed by 55 minutes of religious music or other religious programming, very audible in northern Ohio from 2200–1300 UTC (Silvi). Station is 10 kW days and 1 kW nights. Has had calls from Chicago, New York, Oregon, and elsewhere. Reports should be sent to WPHG, 805 North Main Street, Atmore AL 36502. (Martin)

1620 ARGENTINA, Radio Esmeralda, Buenos Aires. Letter in Spanish in 60 days from Washington B. Toroco, Encargado De Obra and Pastor Genuario Rodriguez Almeida, along with a key chain, stickers, and tourist information. Address: Ministerio Radial y Televisivo, Asociacion Civil Iglesia, Jesus es mi Salvador, Avda San Juan 2461, Capital Federal, Buenos Aires. "In my 33+ years I have been collecting QSLs, this is my first from Argentina, and my 11th South American MW QSL." (Martin)

1650 KGXL, Costa Mesa, CA, at 0700 UTC with ID, "KGIL, AM 1260, Beverly Hills and KGXL, AM 1650 Costa Mesa" (Griffith). Nostalgia and Broadway show tunes in WJDM-1660 splatter. (Conti)

Reader Mail

Stationed in Japan, William Bunch writes, "One of my favorites is 'Broadcast DXing' and while reading Bruce Conti's February column I ran across two items that rang a bell with me. Regarding the 'Long Distance DJ' describing the DJ who moved from L.A. only to keep his show alive from Florida via high-tech, I live in northern Japan and KKBT is one of the radio stations that I am able to receive by way of our cable radio subscription service. So Kevin 'Slow Jammin' James is getting out just a little further west than just California (via satellite of course). Some other stations that we receive here in high-fidelity stereo are WPLJ-FM, NY; POWER-106 FM, LA; Virgin Radio, UK; NRJ-FM, Paris; KSSK-FM HI; KOST-FM, LA; KKSF-FM, San Francisco. In mono, we also get BBC, VOA, RFI (France), RAI (Italy), REE (Spain), Deutsche Welle (Germany), WRN (Britain), and NPR (USA). It is now hard to call DXing difficult when all I have to do is change a channel on a cable box and get high-fidelity programming from around the world. I am still trying to catch one of those X-band stations from the U.S., but no luck so far.

"Later on into the February column, you mention the Sony SRF-42 AM stereo receiver. Here in Japan, I use a Sony SRF-SX90R pocket radio. It receives FM from 76–108 MHz (international) as well as AM stereo at 9- or 10-kHz spacing. I travel a lot both overseas and to the U.S., and this little guy goes on every trip. Instead of difficult analog tuning, it has digital LCD readout with seven pre-set push-buttons all in a package half the size of a pack of cigarettes. A pair of earphones retract into the case at the push of another button. Nice, neat little package that travels well and sounds great. When I am in the U.S., there is no difficulty hunting down very distant DX on the AM band and in stereo. I would equate it to an excellent car radio in the sensitivity department. I have never seen these radios offered in the U.S., though they have been around here in Japan since 1994 for about $80. That's it from this side of the 'big pond.' You guys keep up the good work."

Since the AMax AM stereo report, I've received inquiries about adapters or converters for existing receivers. Unfor-

Seeking Permits to Construct New AM Stations

NM	Bernalillo	890 kHz	10/1 kW
NM	Taos	1340 kHz	
NV	Sparks	1400 kHz	350 watts
NY	Lansing	750 kHz	

Granted Permit to Construct New AM Station

PR	Mayaguez	1260 kHz	Exp. synchr. xmtr.

Seeking Permits to Construct New FM Stations

AL	Batesville	99.5 MHz	
AL	Georgiana	89.3 MHz	800 watts
AR	Ft. Smith	90.7 MHz	
AR	Heber Springs	89.7 MHz	1 kW
AZ	Scottsdale	89.9 MHz	
CA	Antioch	89.7 MHz	
CA	China Lake	91.7 MHz	
CA	Coalinga	90.7 MHz	
CA	Hanford	88.5 MHz	
CA	Lamont	91.7 MHz	6 kW
CA	Leemore	88.5 MHz	
CA	Lompoc	90.7 MHz	
CA	Point Reyes Sta.	90.5 MHz	
CA	West Point	89.1 MHz	
CO	Colorado City	89.9 MHz	
CO	Ft. Collins	89.7 MHz	
CO	La Junta	89.9 MHz	
CO	Rye	90.9 MHz	
FL	Lockhart	89.5 MHz	
FL	Woodville	97.9 MHz	
IA	Center Point	89.9 MHz	
IA	Marion	89.9 MHz	
IA	Mason City	88.5 MHz	3 kW
IL	Effingham	89.3 MHz	
IL	Sherman	88.9 MHz	
IN	Columbus	90.3 MHz	1.5 kW
IN	Lafayette	90.7 MHz	
IN	Lowell	89.1 MHz	
KS	Arkansas City	91.3 MHz	
KS	Elwood	89.7 MHz	
LA	Bastrop	91.9 MHz	
LA	Bunkie	89.5 MHz	
LA	De Quincy	89.1 MHz	250 watts
LA	Norco	91.1 MHZ	250 watts
MI	Monroe	88.1 MHz	
MO	Country Club	89.7 MHz	
MO	Owensville	95.3 MHz	
MS	Liberty	107.7 MHz	
MT	Kalispell	88.7 MHz	220 watts
MT	Missoula	88.3 MHz	1 kW
NC	Manteo	88.9 MHz	
NH	Nashua	88.3 MHz	
NH	Peterborough	88.1 MHz	
NM	Kirtland	102.9 MHz	
NM	Raton	96.5 MHz	
NM	Raton	97.7 MHz	
NY	Eagle Bridge	88.1 MHz	100 watts
NY	Fenner	90.5 MHz	
OH	Norwalk	90.7 MHz	
PA	York	88.7 MHz	140 watts
SC	Cross Hill	94.1 MHz	
SD	Sioux Falls	90.1 MHz	1 kW
TN	Brownsville	88.3 MHz	100 watts
TN	Portland	91.5 MHz	400 watts
TN	Savannah	88.1 MHz	2.8 kW
TX	Bloomington	91.5 MHz	
TX	Falfurrias	103.3 MHz	
TX	Farmersville	92.1 MHz	
TX	Midland	90.1 MHz	1 kW
TX	Victoria	91.5 MHz	
TX	Weatherford	88.5 MHz	
UT	Logan	90.5 MHz	
VA	Ashland	88.1 MHz	1.1 kW
VA	Charles City	89.7 MHz	10 kW
VA	Exmore	106.1 MHz	
VA	Richmond	88.1 MHz	12 kW
VA	Shawsville	102.5 MHz	
WY	Buffalo	90.5 MHz	430 watts

Granted Permits to Construct New FM Stations

IL	Du Quoin	90.1 MHz	
KS	Colby	97.9 MHz	
MD	Leonardtown	91.7 MHz	50 kW
NC	Hatteras	94.5 MHz	
PA	Franklin	89.5 MHz	1 kW
TX	Hebronville	101.7 MHz	
TX	Kerrville	88.7 MHz	
WV	Point Pleasant	88.1 MHz	3 kW

Cancelled

KSAN-FM2	Walnut Creek, CA	94.9 MHz (Booster)
KSAN-FM3	Danville, CA	94.9 MHz (Booster)

Seeking Changed AM Facilities

KCBR	Monument, CO	1040 kHz	Seeks increase to 5 kW
KLAC-AM	Los Angeles, CA	570 kHz	Seeks increased power
KSUD	W. Memphis, AR	730 kHz	Seeks increased power
KWTX	Waco, TX	1230 kHz	Seeks reduced power
KYCY	San Francisco, CA	1550 kHz	Seeks daytime increase to 50 kW
WLIJ	Shelbyville, TN	1580 kHz	Seeks daytime increase to 5 kW
WREN	Topeka, KS	1250 kHz	Seeks move to Kansas City, 25 kW
WSNL	Flint, MI	600 kHz	Seeks to reduce night power
WTVN	Columbus, OH	610 kHz	Seeks to increase night power

Changed AM Facility

KCHG	Somerset, TX	810 kHz	Added 25 kW night service

Seeking FM Frequency Changes

KJAB-FM	Mexico, MO	90.1 MHz	Seeks move to 88.3 MHz

KUCV	Lincoln, NE	90.9 MHz	Seeks move to 91.1 MHz

New AM Call Letters Issued

KBGG	Des Moines, IA
KKWY	Fox Farm, WY
KSXX	Roseville, CA
WCMQ	Miami Springs, FL
WEZI	Harrisonburg, VA
WPHG	Atmore, IL

Pending AM Call Letter Change

New	Old	
WOEG	WMDC	Hazelhurst, MD

Changed AM Call Letters

WAWH	Dublin, GA	
WAWI	Lawrenceburg, TN	
WCVC-FM	Wise, VA	
WOFM	Beach City, OH	
WPFR	Clinton, IN	
WRAN	Tower Hill, IL	
WSDL	Ocean City, MD	
WWFY	Hague, NY	
WYFZ	Keystone Hts.,	FL

Pending FM Call Letter Change

New	Old	
WDKO	WMDC-FM	Hazelhurst, MD

Changed FM Call Letters

New	Old	
KAHK	KNNC	Georgetown, TX
[illegible]	[illegible]	[illegible]

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f service occur.
er and satellite
ng cycle 22. We

is no way to attach an adapter to get AM stereo out of a mono receiver. In addition, because the AM section of a receiver would normally be wired for mono audio output, I would imagine that some internal rewiring or modifications would be

satellite has been launched into orbit as part of an early warning system for major solar disturbances, in anticipation of the peak of solar cycle 23. The satellite will help to warn power grids and satellite communications of disturbances before

are now at the start of cycle 23, with peak activity predicted to take place around the year 2000. Thanks to William Bunch, Bob Gilbert, Patrick Griffith, Gary Jackson, Patrick Martin, and Lee Silvi. Until next month, 73s! ■

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NY	Eagle Bridge	88.1 MHz	100 watts
NY	Fenner	90.5 MHz	
OH	Norwalk	90.7 MHz	
PA	York	88.7 MHz	140 watts
SC	Cross Hill	94.1 MHz	
SD	Sioux Falls	90.1 MHz	1 kW
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TX	Weatherford	88.5 MHz	
UT	Logan	90.5 MHz	
VA	Ashland	88.1 MHz	1.1 kW
VA	Charles City	89.7 MHz	10 kW
VA	Exmore	106.1 MHz	
VA	Richmond	88.1 MHz	12 kW
VA	Shawsville	102.5 MHz	
WY	Buffalo	90.5 MHz	430 watts

Granted Permits to Construct New FM Stations

IL	Du Quoin	90.1 MHz	

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STATE _____

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night service

Seeking FM Frequency Changes

KJAB-FM	Mexico, MO	90.1 MHz	Seeks move to 88.3 MHz

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KKWY	Fox Farm, WY
KSXX	Roseville, CA
WCMQ	Miami Springs, FL
WEZI	Harrisonburg, VA
WPHG	Atmore, IL

Pending AM Call Letter Change

New	Old	
WOEG	WMDC	Hazelhurst, MD

Changed AM Call Letters

New	Old	
KDIS	KTZN	Los Angeles, CA
KGER	KJOX	Yakima, WA
KJOX	KCHT	Selah, WA
KLIH	KEZQ	Little Rock, AR
KLLU	KDUN	Reedsport, OR
KQAB	KVLI	Lake Isabella, CA
KVIN	KCDR	Turlock, CA
WBTR	WPPI	Carrollton, GA
WHYT	WIFM	Marine City, MI
WIDB	WZDB	Chicago, IL
WLLB	WRUM	Rumford, ME
WPFM	WDAR	Carlington, SC
WSKO	WLKW	Providence, RI
WTHM	WGCB	Red Lion, PA

New FM Call Letters Issued

KAYM	Weatherford, OK
KAYP	Mount Pleasant, IA
KAYT	Jena, LA
KAYW	Meeker, CO
KAZB	Coalinga, CA
KAZC	Tishomingo, OK
KBVU-FM	Alta, IA
KHSR	Crescent City, CA
KLCU	Ardmore, OK
KLRF	Milton-Freewater, OR
KPAT	San Luis Obispo, CA
KSKD-FM	Livingston, CA
KUWN	Newcastle, WY
WAUZ	Greensburg, IN
WAWE	Mableton, GA
WAWF	Kankakee, IL
WAWH	Dublin, GA
WAWI	Lawrenceburg, TN
WCVC-FM	Wise, VA
WOFM	Beach City, OH
WPFR	Clinton, IN
WRAN	Tower Hill, IL
WSDL	Ocean City, MD
WWFY	Hague, NY
WYFZ	Keystone Hts., FL

Pending FM Call Letter Change

New	Old	
WDKO	WMDC-FM	Hazelhurst, MD

Changed FM Call Letters

New	Old	
KAHK	KNNC	Georgetown, TX
KKNG-FM	KTLS	Newcastle, OK
KLAL	KYTN	Wrightsville, AR
KMXF	KKZQ	Lowell, AR
KOVE-FM	KRTX-FM	Winnie, TX
KOSR	KNRX	Oklahoma City, OK
KRCX-FM	KSXX-FM	Marysville, CA
KRRK	KBBC-FM	Havasu City, AZ
KTHN	KLLI	Hooks, TX
KTLS	KKNG-FM	Holdenville, OK
KUPH	KCUF	Mountain View, MO
KZDF	KRVA-FM	McKinney, TX
WCQL	WYLR-FM	Glens Falls, NY
WORK	WPFM	Panama City, FL
WENN	WRAX	Trussville, AL
WHKX	WDGF	Middletown, RI
WJNE	WDNO	Laurel, DE
WJYN	WZSK	Bethany Beach, DE
WKPO	WMJB	Evansville, WI
WKSL	WJOI	Germantown, TN
WLLC	WSUI	Charleston, SC
WLOB-FM	WWMR	Rumford, ME
WMLX	WCKY	St. Marys, OH
WMXP	WDRK	Callaway, FL
WPNT	WXPT	Brookfield, WI
WRAX	WENN-FM	Birmingham, AL
WSUY	WJZK	Charleston, SC
WTHM-FM	WGCB-FM	Red Lion, PA
WVMQ	WSKP	Key West, FL
WXEX	WDGE	Wakefield, RI

Rescinded Call Letters

KOAZ	Tucson (Call letter change from KCUB)
WAEF	Alberta, VA

tunately, the Motorola C-QUAM chip is an integral part of the receiver's demodulation circuitry. As far as I know, there is no way to attach an adapter to get AM stereo out of a mono receiver. In addition, because the AM section of a receiver would normally be wired for mono audio output, I would imagine that some internal rewiring or modifications would be required even if such an external adapter did exist.

And one more item of interest: A new satellite has been launched into orbit as part of an early warning system for major solar disturbances, in anticipation of the peak of solar cycle 23. The satellite will help to warn power grids and satellite communications of disturbances before damage or disruptions of service occur. You may recall the power and satellite failures that occurred during cycle 22. We are now at the start of cycle 23, with peak activity predicted to take place around the year 2000. Thanks to William Bunch, Bob Gilbert, Patrick Griffith, Gary Jackson, Patrick Martin, and Lee Silvi. Until next month, 73s! ■

ScanTech

BY KEN REISS
<armadillo1@aol.com>

TRUNKING, TIPS, TECHNIQUES, AND MODS

Assistance Vs. Control: Why Computerize Your Scanner?

I'm a big fan of computer-controlled scanning. However, I must say, it's taken a long time to get there. In the early days, the software was either not available or offered very limited functionality. If that wasn't the case, then it seemed as if the computer interface required too much extra hardware for not much in return. What has changed my mind has been a combination of software and hardware enhancements that have finally begun to make the computer/radio union do things that the raw scanner simply can't.

It turns out to be helpful to draw a dividing line in the computer/radio world, because there are really two major categories of computer/radio connection. Computer-*assisted* scanning is using the computer/radio hookup to make life easier. That, all by itself, is a very desirable function. I would consider that things like programming the radio with the computer fit into this computer-assisted category. It's very handy and quite helpful, but you can get there without the computer. Often in computer-assisted scanning, the computer does not have to remain connected to the scanner once the function has been carried out, or perhaps there does not need to be a computer/radio connection. Lots of software that can help your scanning doesn't do anything with the radio directly.

On the other hand, computer-*controlled* scanning gives the computer complete control over the scanning process. The scanner becomes, in effect, a computer peripheral supplying only the radio portion of the equation. All of the control functions are taken away from the scanner and done by the computer. Now you have much more power than you had with just the scanner alone, and you may be able to get the combination of the two to do things that the radio by itself cannot do.

For our purposes, we'll focus on the Optoscan interface and Probe software, not necessarily because they are the only combination that really performs computer-controlled scanning, but because it's an excellent example of true computer control that I am familiar with using.

Caught in the act! Here's a complete computer-control setup including a bargain computer. Someone else in the house seems to have discovered how easy it is to scan this way. Fortunately, with HyperBanks and Probe 4.0's new HyperSettings, it's very easy to put things back to normal.

Optoscan Interfaces

The Optoscan interfaces represent the ultimate in computer control because they don't work any other way. Most other computer/radio connections offer you the possibility of both computer assist and computer control, depending on the software that you choose. Some of these other combinations, in fact, offer the best of both worlds — with the right radio. An excellent example of this is ScanStar with the ICOM radios. You can control the scanner during the scan process or use the software to upload and download memories. In fact, ScanStar has a mode where the computer becomes the slave to the radio, which is a very cool computer application for shortwave listeners, but probably not as much help for scanner enthusiasts.

Up until recently, a big part of the problem with getting into any kind of computer/radio system was that it required quite a radio. Only the high-end units like ICOMs and AOR, even had the option of computer interfaces. Optoelectronics has changed that with the introduction of the Optoscan series of interface units that will adapt more reasonably priced radios to the computer.

One of the leading criticisms of the Optoscan units is that they will not program the radio — but oh, what they will do! The Optoscan units (there are three models) provide a way to take control of the scanner away from the scanner's own on-board controller and give it to the computer. That's it. There is no direct

connection to the scanner's controller, so there is no way for the unit to talk to it in order to program memories. But by giving control over to the computer, we can make the scanner do all sorts of tricks it's not capable of by itself. Some of the Optoscan models add tone reader/squelch capability (depends on software) and signal strength measurements that the radio did not have originally.

The functions that you get are entirely dependent on software. Over the years, I have tried a lot of software, but my all-time favorite, particularly for the Optoscan units, is Probe. Probe is DOS based, as were a number of other products in the early days. As the Windows™ software became available, I thought "Cool." But then reality set in. In order to run a Windows-based system in a real-time control situation, you need a fairly powerful processor, and you need pretty much its full attention to maintain any kind of scan speed. That's great if you're not trying to do other work with the computer, but if that's the machine you must use for other tasks, it can be a tad inconvenient. What I found was that when I was in the shack and could listen, I wanted the computer for other things. Probably with the new 200-MHz and up processors, this wouldn't be as much of a factor, but I haven't really taken the time or had the incentive to test that theory yet.

Peeking At The Probe

When I first got Probe, I was quite impressed with how simple it was. Just a few keystrokes and I was at the data entry screen. After typing in a few frequencies and setting up the COM port, I was off and scanning. The manual walks you through these first few steps pretty quickly. It wasn't long before I was using Probe and the Optoscan-equipped radio as my main scanner and didn't really want to scan without it. The problem was that it tended to tie up my main computer. It will run in a window under Windows 95, but the other applications tend to cover up the scan screen, and then you lose track of what's going on. It worked, and it worked well, but wasn't what I really wanted.

Then I remembered that old computer I had in the basement. What a perfect application. Just park the thing in a corner, put some software on it for the scanner, and let it run full time. Perfect application for Probe. I have Probe on another computer too, for when I'm not working on something else, but the older DOS system activates Probe from the Autoexec file as it starts. I have seen systems similar to the one I'm using on sale for $100 or less, and, if you ask around, you might find someone who would give you one just to get rid of it.

Now that we're up and running, what exactly is computer control going to do for us? In a nutshell, it's going to change the focus of your scanning. I said that Probe was simple to set up and run and it is. But underneath that simplicity are a lot of very specialized options that you can start to tinker with after you've got the basics down. I know some Probe users who have never gone into the special settings and are happy as clams. (I've often wondered where that phrase comes from, because I've never been able to discern the emotional state of any clam.) But "there's power in them there" settings. Let's talk about just a few that will change your scanning habits.

Banks Gone Hyper

The stock scanner has 10 banks of 40 channels each on the 2005/2006, or 10 banks of 100 channels each on the 2035/2042. Banks of 100 channels when you only have 10 is almost ludicrous. Probe offers 99 banks per group. You can have up to 4,000 groups, but you can only scan one of them at a time, so we'll ignore that for the moment. Each of Probe's 99 banks can have up to 1,000 channels, but you're not likely to want anywhere near that in most banks.

Just by having 99 banks, you can begin to break up your scanning frequencies much better than you were able to do on

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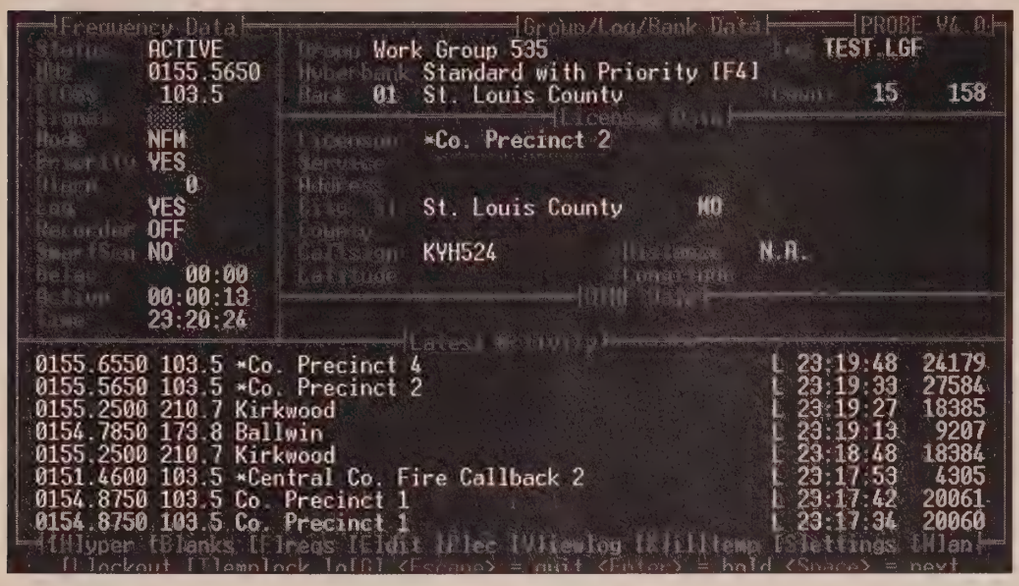


Probe's scan screen provides a very concise display with all the essential information. The computer has complete control of the scanner, so all information is processed through this display. In fact, the scanner's own display is blank when the Optoscan unit is in use.

the stock scanner. Perhaps there are things that you like to have available, but really don't care to listen to all the time. Or perhaps there are frequencies that you only use when a certain event is happening in town. These can be put in a separate bank (or group if you prefer) and turned off until needed.

Having the scanner pre-programmed with the frequencies is a big help. But then Probe offers a feature called HyperBanks to make things even more interesting. HyperBanks allows you to have pre-programmed sets of banks tied to a function key. In version 4.0, these HyperBanks can also affect settings that are used, so it's truly like having 10 different radios at your fingertips. Just hit an "F" key and the software reloads frequencies, switches log files, changes tone squelch settings, and a number of other things if you wish. This feature alone will spoil you rotten for conventional scanning.

But wait, there's more. Probe also has a feature called SmartScan that can directly affect the focus of your scanning — automatically. There are some frequencies that don't get used much unless something is happening. In a conventional scanner, we really only have two ways to handle that. Put them in a bank by themselves and only turn that bank on when something is happening, or leave them in the scan mix and waste time scanning them anyway. SmartScan offers another option.

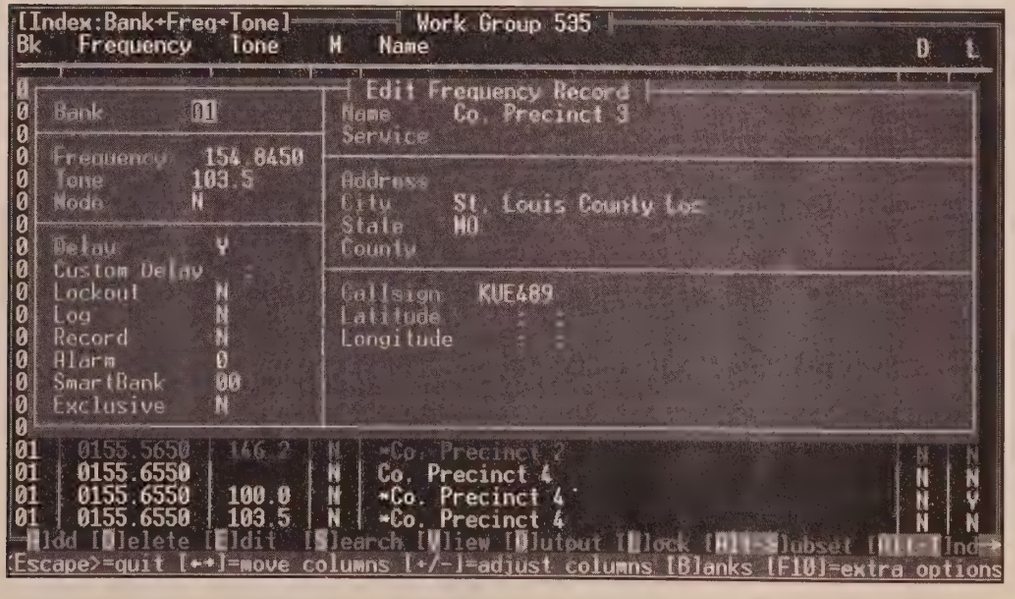
You pick a frequency to act as a trigger. When activity is heard on the trigger frequency, and SmartScan is configured, it activates another bank. The bank that is activated can be the same bank that had the trigger frequency, or a different one. And SmartScan can turn off all the other banks and just concentrate on that one for a few minutes or it can just add the new bank to the mix of banks and frequencies already being scanned.

Let me give you a real-world example to show how this helps. Our local fire services are all dispatched through a central "fire alarm" agency. They also have different frequencies for the trucks to call back and for units to talk to each other at the scene. None of those other frequencies are used until there's a call on the fire alarm frequency. But once that happens, there's all sorts of stuff that I'd like to listen to on those other frequencies. Using SmartBanks, I can get the scanner to follow this pretty well.

I scan the alarm frequency as part of my regular scanning channels. In fact, it's in a bank with just a couple of other frequencies called "fire" that I like to watch. Those other frequencies are in another bank called "Fire Active" that is turned off and not scanned under normal circumstances. However, the alarm frequency is a "trigger" frequency for a SmartBank. When it goes active, I use what Probe calls the Exclusive SmartScan mode and tell it to shut everything else off and turn on the fire active bank.

Pretty cool so far, but it gets better. There is a setting called "Dwell Time" that allows me to decide how long I want to listen to the Fire Active bank looking for activity. I have mine set at about 30 seconds. If there's no activity on any of the Fire Active channels in the 30 seconds, it shuts off the Fire Active bank and restores the banks I was scanning before. If there is activity, it resets the counter and stays in the Fire Active bank looking for more activity. This will continue until eventually the timer expires.

Using this method, I can say with certainty that I am hearing much more follow-up activity than with just a stock scanner. It takes a certain amount of fine tuning and tinkering to discover what settings make sense, what things make sense as triggers, and what should be scanned when the trigger goes active. I've just concluded that sometimes it makes more sense to make a HyperBank out of those settings and switch them on manually. But there is no doubt in my mind that the scanner is both easier to manage and does more for me than a conventional scanner.



The frequency browser with a record detail activated. Editing can be done in this full-screen mode, or in the list view seen behind. It's quick and simple, and it's much easier to type those experimental frequencies on a full-sized keyboard than the scanner's program keys.

Extensive Tone Controls

Probe also has unmatched tone control. CTCSS and DCS can both be decoded by the Optoscan interfaces (except OS456-Lite). Various software has used this for squelch purposes and to help identify the station transmitting. Nowhere have I seen more extensive tone controls than in Probe. It will not only let you select whether or not you wish to squelch by tone, but you can lock out certain tones and allow others to pass through. You can also allow only signals without tone to pass through while ignoring any with a tone. Truly a respectable tone control system.

Even if you don't need tone squelch, you can still use the tone controls to help identify different users sharing a frequency with different tones. By putting into the database several agencies that share a frequency but use different tones, you can get Probe to pop up the correct user and to log that information on the transmission. You can even lock out a particular tone/user without having to lock out the entire frequency.

So there you have it. This brief introduction to computer-controlled scanning has just scratched the surface. The bottom line is that no matter which method of computer/radio interface you choose, you're likely to get spoiled. Just the ability to reprogram the radio quickly for an upcoming trip or other event is a major step forward. You'll find yourself making much better use of some of those frequency files that you have sitting around.

And, if you decide to go with a system that allows full control, you probably won't want to go back to a standard scanner. There are several programs currently on the market that are excellent and offer a variety of features. Programs such as ScanStar, ScanCat, and Radio Manager for Windows all operate under Windows or Windows 95 and support a wide variety of radios. Some of the newer scanners are factory equipped with computer interfaces, while others can have simple interfaces and accessories added easily.

Your Input Needed

I'm always looking for your input. Are you using a computer-controlled or assisted system? Send in a picture and let us know what you're doing with it. If you've got questions about what system is best for your radio, send those, too. We'll answer as many as we can right here in "ScanTech." See you next month!

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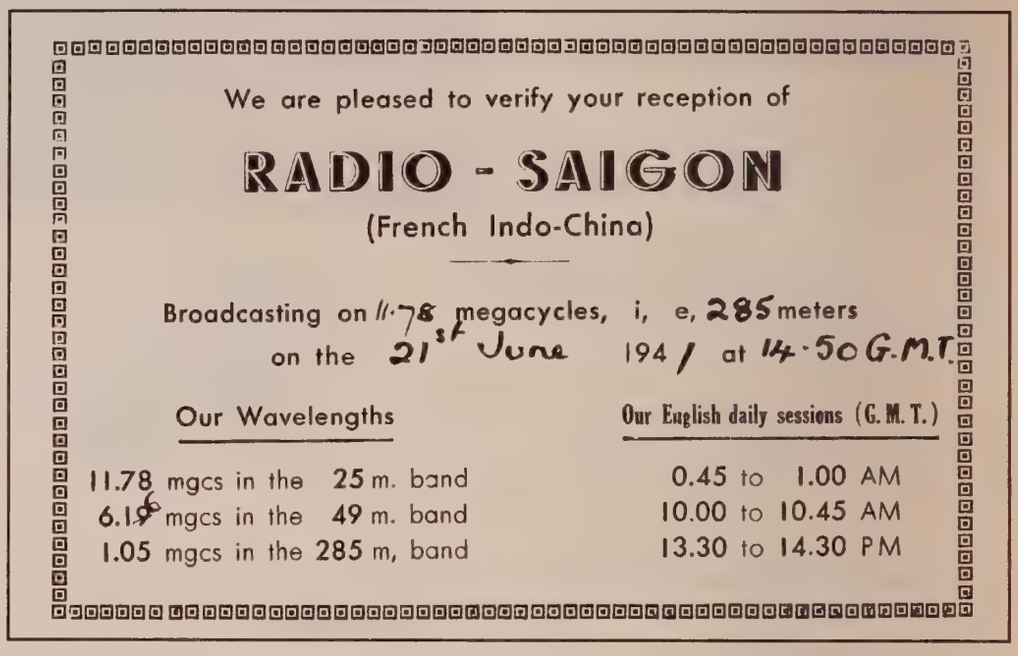
The Listening Post

BY GERRY L. DEXTER

WHAT'S HAPPENING: INTERNATIONAL SHORTWAVE BROADCASTING BANDS

Let's Support Radio New Zealand International In Its Time Of Need!

Sometimes it seems we can never rest easy in the world of shortwave; there always seems a new menace looming on the horizon, and headed in our direction. The latest nasty comes out of New Zealand in the form of reports that certain elements in the government there are recommending the closure of Radio New Zealand International. So, again, we had better take up our pens or man our keyboards, and let these folks know we don't want that to happen. We want RNZI to continue for many years to come. Letters of support can go to Linden Clark, Manager of Radio New Zealand International, P.O. Box 123, Wellington, New Zealand. You can also send an e-mail message to the Prime Minister Jenny Shipley at: <announce@ministers.govt.nz>. Radio New Zealand International has always been one of the more wonderful shortwave voices, and we should all make our own voices heard in support of this fine station.



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6.16 mgcs in the 49 m. band	10.00 to 10.45 AM
1.05 mgcs in the 285 m, band	13.30 to 14.30 PM

Here's a reproduction of Radio Saigon's QSL from "French Indo-China" back in 1947! (Thanks to Dr. Adrian Peterson of Adventist World Radio)

RNZI's most recently available schedule is: 1650–1750 on **6145** (Mon.–Fri.), 1751–1850 on **9810** (Mon.–Fri.), 1851–1951 on **11735** (Sun.–Fri.), 1858–1958 on **11735** (Sat.) 1951–2155 on **15155** (Sun.–Thurs.), 1959–2205 on **15115** (Fri./Sat.), 2156–0458 on **17675** (Sun.–Thurs.), 2205–0458 on **17675** (Fri./Sat.), 0459–0815 on **11905** (Mon.–Fri.), 0459–0758 on 11905 (Sat./Sun.), 0816–1206 on 9700 (Mon.–Fri.), 0758-1206 on **9700** (Sat/Sun). In addition, **6070** and **6105** are used for occasional live sports coverage between 1206 and 1650. (Sports events beginning before 1500 are carried on **6105,** events starting after 1500 are carried on 6070.) Radio New Zealand International's Web page is at: <http://www.actrix.gen.nz/biz/rnzi>.

Star Radio, which the authorities in Liberia had closed down, has begun broadcasting again. The Liberian telecommunications agency had accused Star Radio of broadcasting on frequencies it had not been assigned. The Liberian authorities have now given the station authorization to broadcast. Star Radio is funded by the U.S. Agency for International Development through the International Foundation for Election Systems. It operates on shortwave and a local FM frequency. Its shortwave operations are from 0500 to 0800 on **3400** and 1700 to 2100 on **5880**.

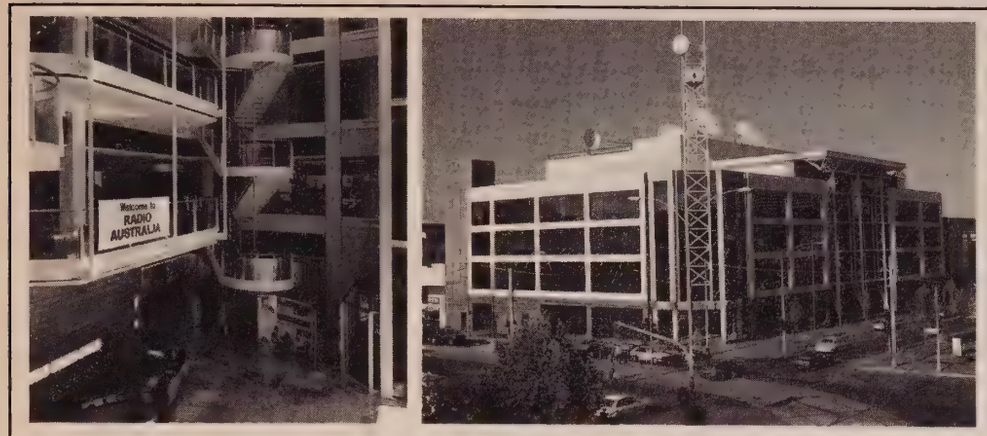
Reader Joe Kenneth Wood in South Carolina sends word that **West Coast Radio Ireland** announced that it might have to leave the air due to a lack of funding. It asked for letters of support from its listeners. (As we understand it they were referring to their North American transmissions, which are aired on shortwave via the Julich transmitter site of the Voice of Germany.) You can show your support for these broadcasts by writing to West Coast Radio Ireland, Murneen Post Office, Claremorris, County Mayo, Ireland. Wood notes that the broadcasts are heard on Thursdays broadcasting from 0100 to 0200 on **5905.** A week or so after the announcement, they did receive some financial aid from a British newspaper, but there's no telling how long this may allow them to continue.

Standby for a new shortwave station to come on the air from Chile. Christian Vision, which operates Radio Christian Voice in Zambia, says it is nearing completion of "Voz Cristiana." The station will broadcast to all of Latin America in Spanish and Portuguese using four 100-kilowatt transmitters at a site not far from Santiago, where the studios and offices will be located. No times or frequencies have been announced as yet. Broadcasts are due to start later this year.

Argentina's new Radio America International is reported to have done some test broadcasts on **15280**, running about 30 kW. We haven't seen a full schedule yet, but they are supposed to be in operation for 16 hours a day. Most programs will be in Spanish, with Portuguese and English due to be added later. Address: Intendente Abel Costa 289, 1708 Moron, Argentina.

The Voice of Hope's transmitter on 6280 from **Lebanon** was destroyed in a fire a few months ago. VOH on shortwave is now limited to **9960** using 12 kilowatts. 6280 was on the air 24 hours a day.

You may soon be hearing Radio Yugoslavia over an as yet unspecified



RADIO AUSTRALIA...in touch with the world.

Two views of Radio Australia's home base grace this QSL received by Jeffery Muska.

U.S. commercial shortwave station. Additionally, Radio Yugoslavia has signed an agreement with China to have its programs carried by China Radio transmitters in order to better reach listeners in Australia, the Far East, and the West Coast of North America.

Radiodiffusion-Television du Senegal, Dakar, was a powerhouse regular during the late evenings (and afternoons "in season") for many years, but has been mostly gone from that 60-meter band spot for quite a while. Apparently, the only action one can get these days is on **11800** between 0558 and 0000 in French and other languages. The summer months should allow a reasonable chance to hear this at their 0558 sign on, if it isn't manageable during the daytime. If nothing else, RTS is memorable for its long-used QSL which showed a black and white photo of a couple of dead fish on a beach!

The newest U.S. commercial/religious broadcaster may well be on the air as you read this. **WWBS** in **Macon, Georgia** is scheduled to use **11910**, but at this point, we don't know the on-air target date, nor the operating schedule.

If you heard any of those special broadcasts from Radio San Marino International a few months ago, you'd better erase the check mark next to that country in your log — or at least place a question mark beside it. There's a growing belief that the station did not operate from tiny San Marino, but rather from inside Germany. More and more people are coming to the conclusion that it was a hoax. Yes, the broadcasts occurred, but it now seems more unlikely that they came from the claimed location.

Remember that we always welcome your informational input. Log reports should be listed by country, double-spaced between items, and tagged with your last name and state abbreviation. Besides your loggings, we're always in need of such things as info about station address changes or QSL policies, photographs of shortwave stations or personalities, photos of you and your shack (or, if you're the shy type, of just your shack), spare/sample QSL cards, station brochures, schedules, and any other informative or illustrative items you care to send. Thanks so much for your continued interest and support!

Here are this month's logs. All times are in UTC, which is five hours ahead of EST, i.e. 0000 UTC equals 7 p.m. EST, 6 p.m. CST, 5 p.m. MST and 4 p.m. PST. Double capital letters are language abbreviations (FF = French, AA = Arabic, SS = Spanish, etc.). If no language abbreviation is included, the broadcast is assumed to have been in English.

ALBANIA — Radio Tirana, **7135** at 2224 with news feature, IS and off at 2226. (Jeffery, NY)
ALASKA — KNLS, **6150** at 0919 in RR. (Foss, AK)
ALGERIA — Radio Algiers Int'l, **15160** at 1200 in EE with ID, news, comment, pops. New time for English. **Parallel 11715** which was very weak. (Alexander, PA)
ANTIGUA — BBC relay, **5975** at 2219. (Harris, TN) 2057, 0224 and 0354. (Jeffery, NY) **17840** at 1645 with Big Ben and news. (Dybka, TN)
ARGENTINA — RAE, **11710** at 0245 with sports and tangos. (Moser, IL; Harris, TN)
AUSTRALIA — Radio Australia, **6020** at 1230 with programming from National Radio. **17795** at 2200 with "Australia All Over." (Jeffery, NY) **9580** at 1200 and **9770** at 1219. (Delfratte, PA) **9710** at 0855. (Foss, AK)
AUSTRIA — Radio Austria Int'l, **6015** at 0534. (Harris, TN) **6155** at 0644. (Foss, AK) **7325** at 0010 with domestic service relay in GG. ID followed by three minutes of news at 0200. (Schwartz, WI)

Abbreviations Used in Listening Post

AA	Arabic
BC	Broadcasting
CC	Chinese
EE	English
FF	French
GG	German
ID	Identification
IS	Interval Signal
JJ	Japanese
mx	Music
NA	North America
nx	News
OM	Male
pgm	Program
PP	Portuguese
RR	Russian
rx	Religion/ious
SA	South America/n
SS	Spanish
UTC	Coordinated Universal Time (ex-GMT)
v	Frequency varies
w/	With
WX	Weather
YL	Female
//	Parallel Frequencies

BOSNIA — Radio Yugoslavia, **6185** with "Radio Yugoslavia Press Review" at 2210. (Dybka, TN) **7120** at 0100 with news. (Ziegner, MA)
BOLIVIA — Radio Pio Doce, **5952.4** at 0005 in SS with man and woman talking, phone talks, ID, some Bolivian music. Fair. Covered by WYFR at 0100. (Alexander, PA)
BOTSWANA — Voice of America relay, **7415** at 0359 with ID, news. (Jeffery, NY) **9885** at 0329 with end of "Daybreak Africa." (Foss, AK) **12080** at 2221. (Harris, TN) **15360** at 1630 sign on ". . . welcome to the Voice of America in Swahili." (Dybka, TN)
BRAZIL — Radio Nacional/Radiobras, **15265** at 1800 in EE with music and features to 1920 close. Also **15445** at 1300. (Jollin, MA) 15445 at 1230; 1300. (Delfratte, PA; Northrup, MO) Address is Radio Nacional do Brazil, P.O. #08840, Code #70912-790, Brasilia, D.F. (Jollin, MA)
BULGARIA — Radio Bulgaria, **7370** at 0329 with announcements, news in presumed Bulgarian. Also 0025 on **7375.** (Wilden, IN) **9485** at 0058 with mailbag and **9700** at 2210 with news. (Delfratte, PA) 2000 with schedule, news, music, comment. (Lynch, NC)
BURKINA FASO — Radio Burkina, **4815** at 0651 in FF. (Dybka, TN)
CAMEROON — CRTV, Yaounde, **4850** at 2100 with EE news to 2109, FF talk, Afro-pops. (Alexander, PA)
CANADA — Radio Canada Int'l, **9535** at 0100 with tones, IS, announcements in FF. (Wilden, IN) 0233 with "Spectrum." (Jeffery, NY) **11945** at 1835. (Harris, TN) **15425** at 1340. (Northrup, MO)
CBC Northern Quebec service, **9625** at 0425 in vernacular. (Jeffery, NY)
BBC via Canada, **6175** at 2221 and **9590** at 2223. (Harris, TN) **9515** at 1446. (Jeffery, NY) *(What is the Arabic speaking station underneath from around 1400?—Editor)*
CHAD — Radiodiffusion Nationale, **4905** at 0531 in FF with ID, music, and "kiloband"

info. (Dybka, TN) *(Apparently this frequency, usually **4904.5**, is no longer in regular use. Chad's channel is now **7120**.—Editor)*

CHILE — Radio Esperanza, **6090** in SS at 0937. (Foss, AK)

CHINA — Yunnan Peoples Broadcasting Station, **6937.25** at 2345 in CC with talk and local music. (Alexander, PA)

Central People's Broadcasting Station, **7504** in CC at 0915. (Foss, AK) Voice of Pujiang, Shanghai, **3280** at 1008 with Chinese string music. (Foss, AK)

China Radio Int'l, **3985** at 2200 (Lynch, NC) *(via Switzerland—Editor)* **6950** at 1220 with news and comment. (Salzman, VA) **9690** (via Spain) at 0321. **9730** (via French Guiana) at 0428. (Delfratte, PA) 0417. (Turnwald, FL)

COSTA RICA — Radio For Peace Int'l, **7385** at 0200 and 0351. (Jeffery, NY) **15050** at 2130. (Delfrate, PA) Adventist World Radio, **5030** at 0300 in SS. (Harris, TN) Radio Exterior de Espana relay, **11815** at 1824 in SS. (Harris, TN)

CROATIA — Croatian Radio, **5840** at 0303 with EE news. Into Croat at 0308. (Jeffery, NY) **6120** at 0201. (Moser, IL)

CUBA — Radio Havana Cuba, **6000** at 0201 with jazz. (Wilden, IN) 1224 in SS with music, IS, ID. Also **9820** at 0330, **11760** at 2247 in SS, **15230** at 0323 in SS. (Jeffery, NY) **9830 USB** at 2230. (Harris, TN) 0327. (Delfratte, PA) **15340** in SS at 1325. (Northrup, MO)

CYPRUS — BBC relay, **6180** at 2113. Co-channel QRM from UAE Radio, Abu Dhabi. (Jeffery, NY)

CZECH REPUBLIC — Radio Prague, **7345** at 2246. (Harris, TN)

DOMINICAN REPUBLIC — Radio Cristal, **5013** in SS at 2246 with fast pops. National anthem at 2258 and into sports. (Dybka, TN)

ECUADOR — HCJB, **5865** at 0629 with ID in SS. (Foss, AK) **9745** at 0000, **12025** in SS at 2203. (Jeffery, NY) **15115** at 1255. (Northrup, MO) Radio Quito, **4919** at 0947 with ID by woman, Latin pop-rock. (Schwartz, WI) 0241 in SS. (Harris, TN) La Voz del Upano (tentative) **5040.05** at 1117 in SS with usual exotic local folk music. Possible SS news at 1125. Ads, jingles. (Alexander, PA) Radio Oriental, **4779.81** at 1015 in SS with talk, time checks, Ecuadorian folk music, announcements with barking dogs, cows, chicken noises. (Alexander, PA)

EGYPT — Radio Cairo, **9850** in AA at 2227. (Harris, TN) **9900** at 2208. (Delfratte, PA) **17800** in AA at 1325. (Northrup, MO)

ENGLAND — BBC, **5995** (via U.S.) at 0250. (Wilden, IN) 6175 (via U.S.) at 0514. (Foss, AK) 15220 (via Antigua) **12325** and **15315** (via U.S.) at 1300 in SS. **15575** at 1505. (Northrup, MO) **17715** via U.S. at 2212. (Jeffery, NY) **17885** at 1910. (Moser, IL) Radio Canada Int'l via UK, **9555** at 1630 in RR. (Dybka, TN) **9735** at 2239. (Harris, TN)

ETHIOPIA (presumed) — Radio Fana, **6940** at 0410 in unidentified language. Male announcer to 0500 then perhaps switch to woman announcer. (Silvi, OH)

EQUATORIAL GUINEA — Radio Nacional, Malabo, **6250** in SS on extended schedule to 0102 sign off with long national anthem. (Alexander, PA) Radio Africa, **15186** at 1710 with U.S. preacher. (Dybka, TN)

Deutsche Welle used this card to mark its satellite connections with its Sri Lanka relay station. (Received by Charles Scott, Glasgow, Scotland in 1989)

FINLAND — YLE, Radio Finland, **11730** at 1352 with clues for a trivia contest. (Wilden, IN) **15400** at 1350 with mailbag, promo for the YLE radio store and Mystery Finn contest. (Delfratte, PA)

FRANCE — Radio France Int'l, **5925** in FF at 0633. (Foss, AK) **7160//7315** at 2000 in FF. (Silvi, OH) **9485** at 1648 in EE. (Dybka, TN) **9715** in FF at 2241, **9790** at 2234 and **9800** at 2232. (Harris, TN)

FRENCH GUIANA — Radio France Int'l relay **13625** at 1213. (Wilden, IN) Radio Japan relay, **11895** at 0352 in JJ to sign off at 0357. (Jeffery, NY) China Radio Int'l relay, **13685** in SS at 0200. (Harris, TN)

GABON — Africa Number One, **9580** in FF at 0707 with music and several IDs at 0717. (Schwartz, WI) **15475** at 1701 in FF with many IDs. (Delfratte, PA)

GEORGIA REPUBLIC — Radio Georgia, **6230** at 2045 to 2056 close in RR with light instrumental music. (Alexander, PA) Voice of Hope via Georgia, **6290** at 1900 to 2100 sign off with IDs, UK address, religious programs in EE. (Alexander, PA)

GERMANY — Sudwestfunk, **7265** at 0702 with news in GG, pop/rock. (Schwartz, WI) Deutsche Welle, **3995** at 0120 in GG. EE lessons. (Wilden, IN) **9640** (Antigua) at 0148 and 0340. (Delfratte, PA) Here and **parallel 11810** at 1900. (Lynch, NC) **9690** in GG via Rwanda at 2234 and **9765** at 2232. (Harris, TN) **13780** at 1350, **15275** at 1305, **15285** (Antigua) at 1305 and **17765** (Antigua) at 1325, all in GG. (Northrup, MO)

GREECE — Voice of Greece, **9380** at 1900 with news in EE, then into Greek. (Lynch, NC)

GUAM — KSDA (presumed), **11775** heard at 2311 with religious program, "Global Public Radio" and ID. QRM from 11780. (Dybka, TN)

GUATEMALA — Radio K'ekchi, **4845** at 0050 in SS with talk, local religious music, full ID at 0128 "TGVC, La Voz Evangelica de las Casas..." (Alexander, PA)

Radio Coatan, **4778.47** at 0255 to 0302 close. SS talk, ID, SS pops. Off with national anthem. Not heard daily. Slightly off nominal **4779.7.** (Alexander, PA)

Radio Tezulutlan, Coban, **4835** at 1213 in SS with ID. (Delfratte, PA) Radio Buenas Nuevas, **4800** at 0130 in SS. Very audible until 0237 when presumed Radio Lesotho signed on. (Silvi, OH)

Radio Cultural, **3300** at 0300 to 0400 with EE religion this night. SS other nights. (Silvi, OH)

GUYANA — Guyana Broadcasting Corporation, **5949.44** at 0030 with calendar of local events and light instrumental music. Wiped out by Okeechobee sign on at 0100. Also heard with Hindi vocals at 0840. (Alexander, PA)

HONDURAS — Radio Luz y Vida, **3249.51** heard at 0310 to 0401 sign off. EE religious programs, closing announcements with ID and address "HRCP — Radio Light and Life." Off with religious music. EE scheduled 0300 to 0400 Saturdays and Sundays. (Alexander, PA)

HUNGARY — Radio Budapest, **6011** at 0358 with piano music from around Europe. Also **9840** at 2201 with news. (Delfratte, PA) 9840 at 2224 to 2228 sign off. (Harris, TN)

INDIA — All India Radio, **7410** at 1900 with EE external service. (Silvi, OH) **11620** (Bangalore) at 2145 and 2320. (Delfratte, PA) **15075** at 0430 in EE. (Hill, ID)

IRAN — Voice of the Islamic Republic of Iran, **9022** at 2000 with lecture and news in brief. (Ziegner, MA)

ITALY — RAI, **6010** at 0100 with news. (Delfratte, PA) **6015//7225** at 1939 with news. (Lynch, NC) **9675** at 0307 in SS. (Harris, TN)

JAPAN — Radio Japan via Canada, **6110** at 0504; 0519; 0547. (Turnwald, FL; Moser, IL; Harris, TN) **6120** via Canada at 1227. (Delfratte, PA) **6190** at 0653 with news, comment. (Foss, AK) **11895** at 0300 with IDs in EE/JJ, news in JJ. (Wilden, IN) **13630** at 0100. (Paszkiewicz, WI) **13700** at 0346 in unidentified language. (Foss, AK)

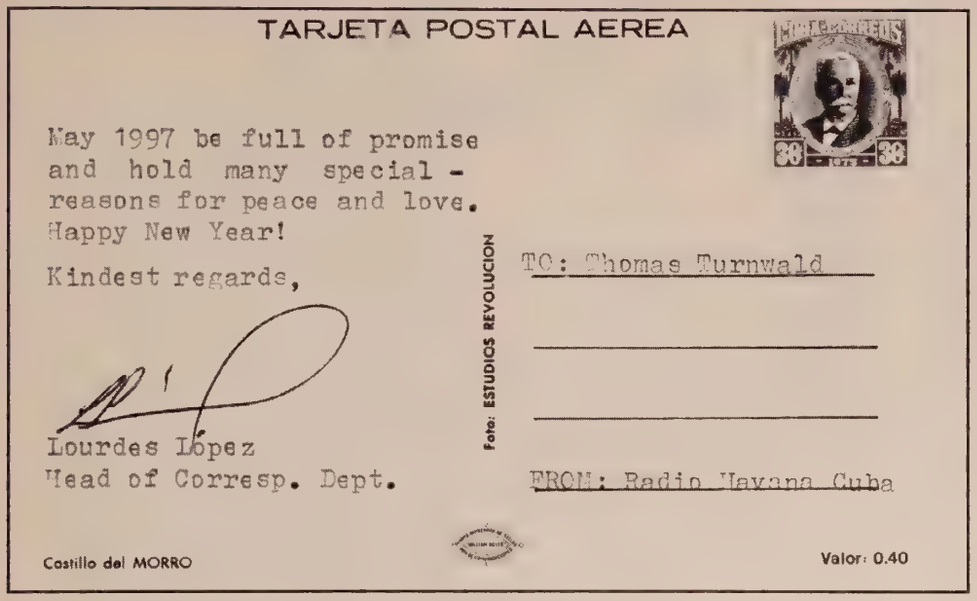
Radio Tampa, **6115** at 0926 in JJ. (Foss, AK)

KUWAIT — Radio Kuwait, **11990** at 1910 with pops. (Lynch, NC) **15505** in AA at 1510. (Northrup, MO)

LESOTHO — Radio Lesotho (presumed) **4800** at 0237 sign off in presumed Sesotho (and sometimes EE?). Signs on with music from 0237 to 0300. (Silvi, OH)

LIBERIA — Radio Liberia, **5100** at 0700 with ID "Radio Liberia International...broadcasting from downtown Monrovia..." and newscast. (Dybka, TN)

LITHUANIA — Radio Vilnius, **5905** (via Germany) at 0029 in EE with ID, news, local


TARJETA POSTAL AEREA
May 1997 be full of promise and hold many special - reasons for peace and love. Happy New Year!
Kindest regards,
Lourdes López
Head of Corresp. Dept.
Foto: ESTUDIOS REVOLUCION
TO: Thomas Turnwald
FROM: Radio Havana Cuba
Castillo del MORRO
Valor: 0.40

Radio Havana Cuba sent this card to Thomas Turnwald in Florida to wish him a happy 1997.

Charles Scott in Scotland got this card from Radio Exterior de Espana in 1992. It marked several big events going on in Spain that year, which REE planned to cover.

weather, features, music. (Jeffery, NY) 0030 with talk of protests over telephone rates. (Ziegner, MA)

MADAGASCAR—Radio Netherlands relay, **9860** at 0335 in presumed Dutch. (Foss, AK) **11655** at 0344 in what sounded like German. (Jeffery, NY)

MOLDOVA— Radio Moldova Int'l, **7500** (via Romania) at 0330 sign on with ID, news, commentary. (Alexander, PA) 0335 with news and commentary. (Delfratte, PA)

MONACO — Trans World Radio, **6230** heard at 0930 to 0945 close with religious programming in German. **Parallel to 7160.** (Alexander, PA)

MOROCCO — Radio Medi-Un (tentative) **9575** at 0847 in FF with western-type jingles and Mideast-type music. (Schwartz, WI) Voice of America relay, **11905** at 1831. (Harris, TN) **15410** at 1620 (Delfratte, PA) **15410//17895** at 1640 with weird transmitter echo. (Dybka, TN)

NEW ZEALAND — Radio New Zealand Int'l, **9700** at 0845 with cricket results. (Foss, AK) **11905** at 0518 and **15115** at 0312 with sports and commercials. (Jeffery, NY)

NICARAGUA — Radio Miskut, **5770** at 0050 to past 0130. Suppressed carrier USB. SS talks, pops, ballads. Also heard at 1210. (Alexander, PA) 0059 with pops. (Dybka, TN)

NETHERLANDS — Radio Netherlands, **5955** at 0823 in DD. (Schwartz, WI) **11655** at 1940, //15315 (Bonaire). (Lynch, NC)

NETHERLANDS ANTILLES — Radio Netherlands Bonaire relay, **6165** at 0430. (Turnwald, FL) 0427 with IS, ID, frequency info, program preview. Also **9590** at 0410 in SS. (Jeffery, NY) 0446 with mailbag program. (Delfratte, PA) **9895** at 0323. (Foss, AK)

NIGERIA—Voice of Nigeria, **7255** at 0500. (Moser, IL) 0551 with "News About Nigeria." (Jeffery, NY)

Radio Nigeria, Kaduna, **9570** at 0610 with news, ID. (Jeffery, NY)

OMAN — Radio Oman, **9735** in AA at 2045 with news, music. (Ziegner, MA) BBC relay, **6050** at 2142 with "Speaking of English" program. (Dybka, TN)

PARAGUAY — Radio Nacional Paraguay, **9740** at 0800 sign on in SS. Frequency and time info, "Muy Buenos dias!" (Schwartz, WI)

PERU—Radio Satelite, **6725.56** in SS at 0205 to 0300 sign off. SS pops, Peruvian songs. Off with national anthem. (Alexander, PA)

Radio Altura, **3339.93**, heard at 0230 with SS announcements, Peruvian folk music, SS pops. Occasional utility QRM. (Alexander, PA) Radio Cristal, **7745.87** at 0015 with SS talks, ID, SS pops, Peruvian folk music. Gone at 0306 recheck. (Alexander, PA) Radio San Francisco Solano, tentative, **4750.05** at 0240 in SS. Weak and wobbly with Peruvian music. Off around 0250. (Alexander, PA)

Radio Frequencia Nueva, **5304.98** at 0210 in SS. Gone at 0204 recheck. (Alexander, PA) Radio Villa Rica, tentative, **4886.76** at 1035 in SS with Peruvian folk music, SS talks. (Alexander, PA) Radio Andina, **4995.57** at 0245 to 0302 close. Huaynos, SS talks, ID, abrupt sign off. (Alexander, PA)

Radio Gotas del Oro, **4565,** drifting to **4571.3v,** 0903 in SS with Peruvian folks music, drifting upwards at about 350 hertz a minute! (Alexander, PA)

PHILIPPINES — Radio Pilipinas, **13770** at 0339 in unidentified language. (Foss, AK) Voice of America relay, **11760** at 2310 with news of Asia. (Delfratte, PA)

POLAND — Polish Radio Warsaw, **6035//6095//7285** at 2028 to 2125 with EE to Europe. (Silvi, OH) **9525** at 1305 with news, features and ID. (Jeffery, NY)

PORTUGAL — Radio Portugal, **15505** at 1815 in PP to 1830 close. (Moser, IL) Deutsche Welle relay, **9535** at 0342 with "Arts on the Air," frequency info, IS and off at 0350. (Jeffery, NY)

QATAR—Qatar Broadcasting Service, **7210** in AA heard at 2330. (Paszkiewicz, WI) **11740** heard at 2040 in AA with what seemed a news magazine show, some mentions of Qatar. (Jeffery, NY)

RUSSIA — Voice of Russia **5940** at 0316 with mailbag program. (Delfratte, PA) 2126. (Jeffery, NY) **7105** (via Belarus) at 0032 with news in brief. (Dybka, TN) 0000 and 0330. (Jeffery, NY) 0315 with Joe Adamov answering listeners letters. (Lynch, NC)

SAO TOME—Voice of America relay, **4960** at 0301 with "Daybreak Africa." (Harris, TN)

SAUDI ARABIA—Broadcasting Service of the Kingdom of Saudi Arabia, **11935** at 1839 in AA. (Harris, TN) **15230** at 1320 in AA. (Northrup, MO)

SEYCHELLES ISLANDS — BBC relay, **9630** heard at 1815 with EE lesson, news. (Schwartz, WI)

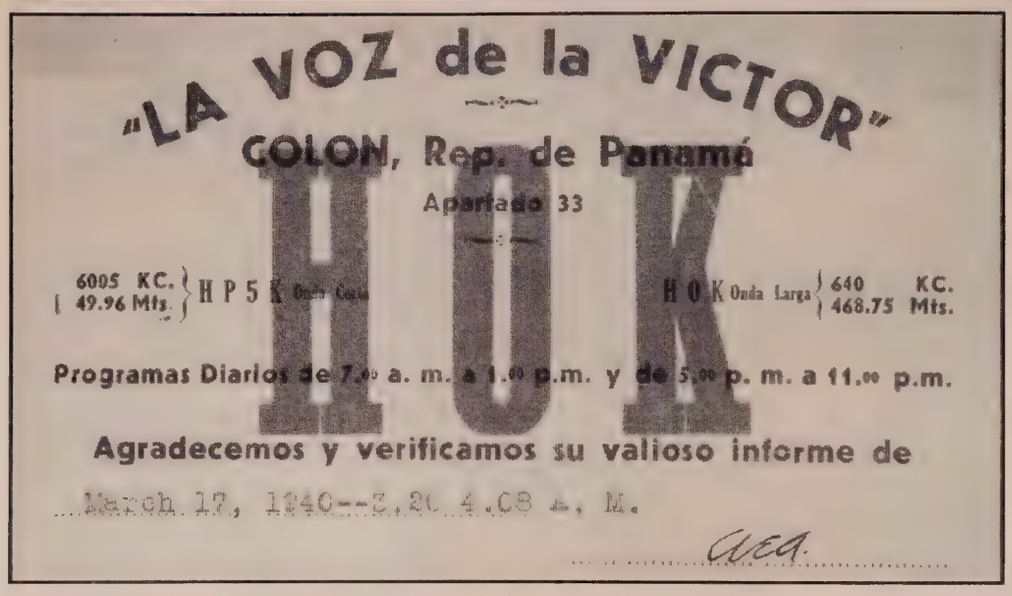
Far East Broadcasting Association, **9500** at 1830 sign on with French to Africa to close at 1903. (Silvi, OH)

SINGAPORE — BBC relay, **15360** at 0100 with news. (Paszkiewicz, WI)

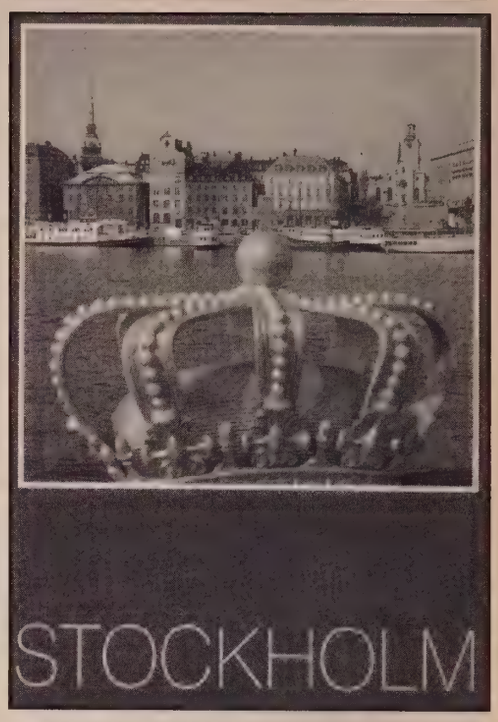
SLOVAKIA — Radio Slovakia Int'l, **5915//6055//7345** at 1930 with news and commentary. (Lynch, NC) **5930** at 0129 with announcements in various languages, then news in presumed Slovak. (Wilden, IN) **6055** at 1945 with regional news. (Dybka, TN)

SOUTH AFRICA—Channel Africa, **11900** heard at 0600 with news, ID, info about college courses in South Africa. (Jeffery, NY) **15240 heard** at 1700 with news and commentary. (Lynch, NC) Trans World Radio, **7215** at 0405 with several IDs "You are tuned to the international voice of Trans World Radio." (Delfratte, PA)

SOUTH KOREA — Radio Korea Int'l,


"LA VOZ de la VICTOR"
COLON, Rep. de Panamá
Apartado 33
6005 KC. 49.96 Mts.
H P 5 K
H O K Onda Larga 640 KC. 468.75 Mts.
Programas Diarios de 7.00 a. m. a 1.00 p.m. y de 5.00 p. m. a 11.00 p.m.
Agradecemos y verificamos su valioso informe de
March 17, 1940--2.20 4.03 A. M.

Another historic QSL is this from La Voz de la Victor, Panama which dates back to 1940. (There hasn't been any SWBC activity from Panama in three or four decades!) (Thanks Dr. Adrian Peterson)



This Radio Sweden QSL sports a combo photo of Stockholm and the Swedish crown. (Thanks Jeffery Muska.)

15575 at 0112 in SS with news about Korea, ID. (Paszkiewicz, WI)

SPAIN — Radio Exterior de Espana, **6055** at 0034 and 0550. (Delfratte, PA) 0527 and in SS at 0310 on **9620**. (Harris, TN) **11715** at 1700 in AA with ID "This is Madrid." (Ziegner, MA) **17715** at 1330 in SS. (Northrup, MO)

Radio Liberty, **7220//9520** at 2210 in RR. Also **7245** from Germany. (Dybka, TN)

China Radio Int'l relay, **9690** heard at 0305. (Harris, TN)

SRI LANKA — Sri Lanka Broadcasting Corporation, **9730** at 0130 with variety of music until wiped out by China Radio Int'l sign on at 0255. (Silvi, OH)

SWEDEN — Radio Sweden, **7155** at 0330 with "60 Degrees North." (Lynch, NC) **15240** at 1310 in Swedish. (Northrup, MO)

SWITZERLAND — Swiss Radio Int'l, **6135** at 0406 with world news. **9905** at 0415. (Delfratte, PA) 0420. (Turnwald, FL)

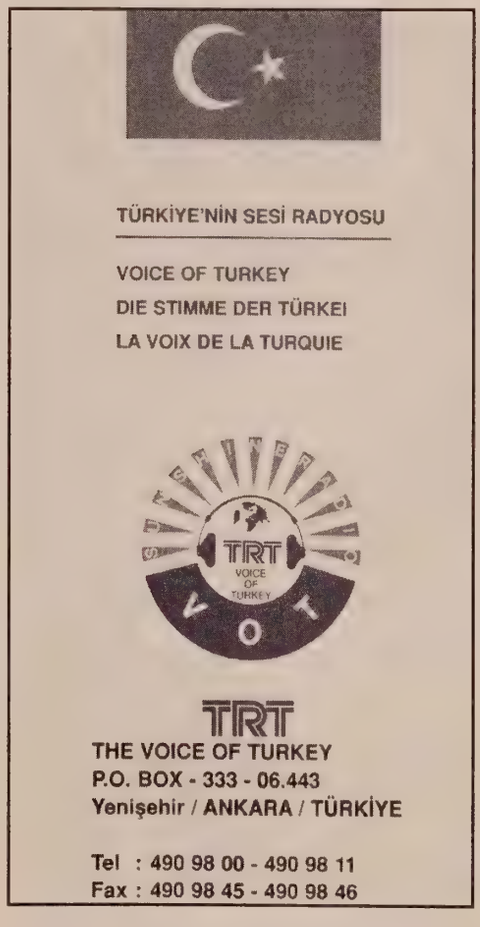
TAIWAN — Radio Taipei Int'l, **5955** via WYFR at 1500 to 1530 with hosts Carson Wong and Paula talking about discontinuing use of "Voice of Free China" and this being the first day using the new name. (Delfratte, PA) **9985** at 2329 with Chinese instrumental music. (Wilden, IN)

TANZANIA — Radio Tanzania, **5050.06**. sign on at 0155 with celeste IS, announcements in unidentified language, choral anthem at 0158, ID, talk in presumed Swahili, Afro-pops. No EE noted through to 0400. They used to have it at 0330. (Alexander, PA)

THAILAND — Voice of America relay, **7200** (best) and **9555** at 0015 in Tibetan. The ID in Tibetan sounds a lot like the ID in English. (Dybka, TN)

TURKEY — Voice of Turkey, **7300** at 0432 and **9445//9460** at 2230. (Delfratte, PA) 9445 at 0530 in Turkish. (Turnwald, FL)

UKRAINE — **7145** at 0134 with "Close Up" program. (Wilden, IN) **7150** at 2230 with classical music, ID, cultural program. (Jeffery, NY) 2230 with European jazz. (Delfratte, PA) 0410 with talk about budget. (Turnwald, FL) 0454 classical music. (Moser, IL)


TÜRKİYE'NİN SESİ RADYOSU
VOICE OF TURKEY
DIE STIMME DER TÜRKEI
LA VOIX DE LA TURQUIE
TRT
VOICE OF TURKEY
V O T
TRT
THE VOICE OF TURKEY
P.O. BOX - 333 - 06.443
Yenişehir / ANKARA / TÜRKİYE
Tel : 490 98 00 - 490 98 11
Fax : 490 98 45 - 490 98 46

The Voice of Turkey sent this folder QSL to Jeffery Muska of New Jersey. The front and back panels are bright blue with the TRT logo in white.

UNITED ARAB EMIRATES — UAE Radio, Dubai, **13675** at 0335 with news. (Jeffery, NY) 0350 with ID "This is United Arab Emirates Radio in Dubai closing down our English service," then anthem and signal cut at 0353. (Foss, AK)

UZBEKISTAN — Radio Tashkent (presumed) **4850** heard at 0205. Local Asian music, xylophone-type IS at 0229 and possible ID. (Alexander, PA) **9715** At 1300 in EE. (Silvi, OH)

VATICAN CITY — Vatican Radio, **15595** at 1310, woman with news in Italian (Northrup, MO)

VENEZUELA — Ecos del Torbes, **4980** in SS at 0347 with Venezuelan songs. (Delfratte, PA)

ZAMBIA — Radio Christian Voice, **3330**, 0230 on extended schedule with continuous religious music, ID at 0400. (Alexander, PA)

ZANZIBAR — Radio Tanzania-Zanzibar, **11732** in AA at 1935 with Koran. (Paszkiewicz, WI)

ZIMBABWE — Zimbabwe Broadcasting Corporation, **3396** at 0300 sign on. (Alexander, PA)

Hooray for all those who put forth such a great effort this time. Cheers — and a hearty "thank-you!" to the following: Susan J. Wilden, Columbus, IN; Tricia Ziegner, Westford, MA; Lee Silvi, Mentor, OH; Robert J. Lynch, New Bern, NC; Ronald Stokes Schwartz, Madison, WI; Mark Northrup, Gladstone, MO; Jill Dybka, Nashville, TN; Tom Delfratte, Sharpsville, PA;Marty Foss, Talkeetna, AK; Paul Harris, Colombia, TN; R.E. Salzmann, Lynchburg, VA; Howard J. Moser, Lincolnshire, IL; Thomas Turnwald, Brandenton, FL; Arnold W. Jollin, Holden, MA; T. Hill, Mountain Home, ID; Brian Alexander, Mechanicsburg, PA; Dave Jeffery, Niagara Falls, NY and Sheryl Paszkiewicz, Manitowoc, WI.

Thanks to each of you! Until next month, good listening! ■

How I Got Started

Congratulations To Bruce Hackett Of California!

Bruce Hackett, KF6JVI, of Irvine, California, has made over 110 contacts and is a member of the ARRL.

Popular Communications invites you to submit in about 150 words how you got started in the communications hobby. Entries should be typewritten, or otherwise easily readable. If possible, your photo (no Polaroids, please) should be included.

Each month we'll select one entry and publish it here. Submit your entry only once; we'll keep it on file. All submissions become the property of *Popular Communications*, and none will be acknowledged or returned. Entries will be selected taking into consideration the story they relate, and if it is especially interesting, unusual, or even humorous. We reserve the right to edit all submitted material for length and grammar and to improve style.

The person whose entry is selected will receive a one-year gift subscription (or a one-year subscription extension) to *Popular Communications*. Address all entries to "How I Got Started," *Popular Communications*, 76 North Broadway, Hicksville, NY 11801-2909 or e-mail your entry to <popularcom @aol.com>, letting us know if you're sending photos.

Our May Winner

Bruce Hackett is 50 years old and a licensed ham, with the call KF6JVI. He says, "When I was 15 years old I received a Hallicrafter's S-38 shortwave radio and after reading ARRL handbooks, I became interested in becoming a ham. But following a nervous breakdown, a few years later I got interested in radios again, but not until I moved from Arizona to California at age 48. I met a ham who helped me a lot. Did I ever think I could get my own ham license?

"I first got involved in an emergency disaster team and we used CBs for drills. Then he told me where I could take the no-code written ham test if I would study and apply myself. At 50, I took the test and received my license. It has been several months since I became a ham, and now I have a Ragchewer certificate and Friendship Award. I joined the ARRL and have made over 110 contacts. What was only a dream at 15 became reality at 50."

Thanks, Bruce, for taking the time to send us your story. Other readers are invited to do likewise — you could be next month's winner! ■

We don't make SCANNERS or the ICOM IC-R8500 RECEIVER
- We make them better -

DELTACOMM I-8500 Communication Manager for the ICOM IC-R8500 communication receiver. With speed as a design goal DELTACOMM's QUICK LOG function will log signal level, frequency, mode, date, time and optional Global Positioning System (GPS) coordinates at speeds in excess of 2400 channels per minute. Here are a few examples of the many advanced features DELTACOMM I-8500 has to offer.

- Load 40 channels of information including ALPHA NUMERICS into one of the R8500's memory banks in 3 seconds.
- Separate volume level, resume scan delay and maximum monitor delay plus 40 character information field for each scan channel.
- Priority channel operation samples at 2.5 second intervals.
- Multi-receiver control will hand off active frequency to next receiver on line. Able to control up to 125 ICOM receivers (optional).
- Traditional scanning is a thing of the past with our CYBERSCAN feature, used to track systems employing frequency hopping.
- Activity log function automatically records and calculates total spectrum usage time.
- Unique search operation stores all frequencies found active and then automatically skips those frequencies during the remaining search cycles. This feature eliminates redundant logging.

Visit our Internet Web Page or Phone/FAX us for program features, new product releases and pricing schedule. DELTACOMM is available for ICOM R9000, R7100, R7000, R71, R72, IC-735 (features vary with type of radio). Also check out our DELTATONE 2.0 repeater programmer.

http://www.execpc.com/~deltacom

Delta Research

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CIRCLE 69 ON READER SERVICE CARD

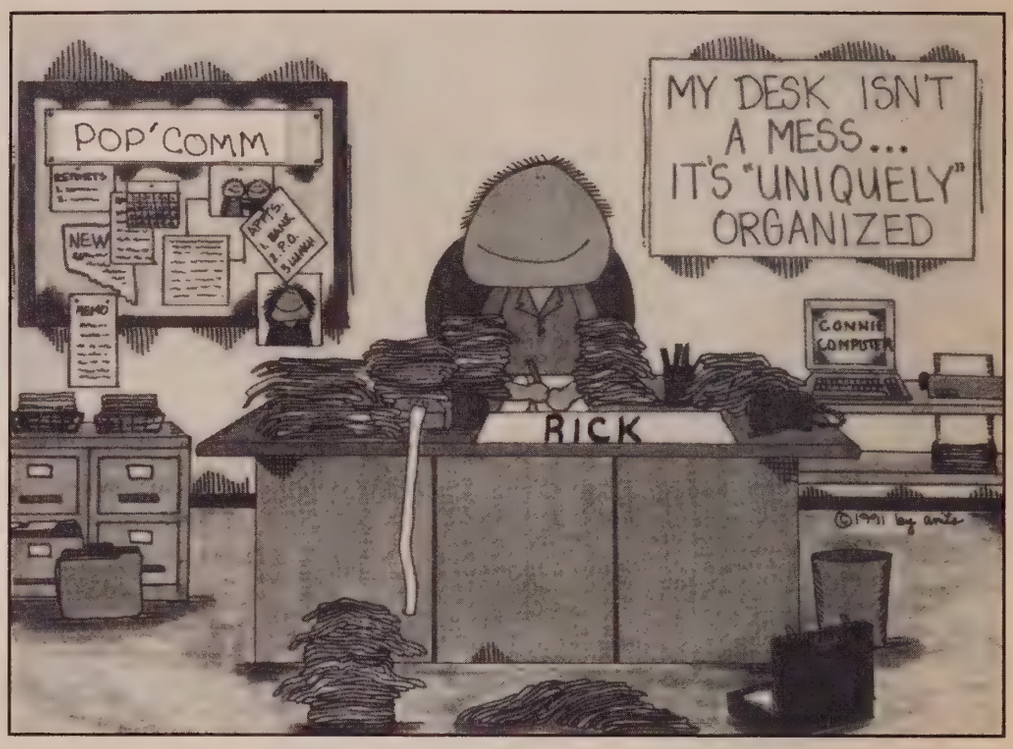
BY RICHARD "RD" BAKER
<CommConf@concentric.net>

Communications Confidential

YOUR GUIDE TO SHORTWAVE "UTILITY" STATIONS

The Buzzer And Other Nifty Things . . .

Rich Klingman's recent log of this station on 4625.0 kHz reminded me that this is still one of many oddities that we hear on shortwave but can't explain! "The Buzzer" can be traced back to the 1980s when it was a "pip" rather than a buzz. I first recall reading about it in Chuck Yarbrough's "Utility World" column in the former Speedx Club's monthly newsletter in 1992. At one time, the signal was DFed to Byelorussia. Apparently, a recent report on the Media Network show via Simon Mason also gave Byelorussia as a probable location. However, recent DF efforts lead Ary Boender to believe the station is near Moscow. So we are still not sure. Other reported frequencies found by Geoff Halligey back then included 13875, 18500, 23125, 27750, 32375, and 37000 kHz. Chuck noted in that column that all these frequencies are harmonics of the original 4625 frequency. The only harmonic frequency not heard is 9250.



My wife's view of my shack.

More recent articles appeared in Ary Boender's *Worldwide UTE News* club newsletter column "Utility Round-Up" appeared in 1995 and 1997. However, the purpose and the user of this signal remains a mystery. Ary notes each burst is exactly one second, and between these bursts, irregular very short bursts (0, 1 sec.) occur. This station can be heard 24 hours a day in most of Europe.

By the way, I recently heard from Chuck Yarbrough, who reports his health has improved. I was very glad to hear that. Chuck was my early mentor for digital decoding, and I think this helped give AT&T a third quarter profit, as I made phone calls to Chuck asking him questions about the Universal M-1000 he sold me — hi! I still have the M-1000.

No sooner did I use the SHARK call sign example in the March column, when Dave Wright reported that the C-27As that formerly operated with the 24th Wing at Howard AFB, Panama, are headed for Davis-Monthan AFB's AMARC in the desert. All ten C-27s which flew with the unit have been declared surplus to requirements and are going through a screening process for possible government agency use. Failing that, they will be put up for sale.

Several readers have noted "RL Base" on USAF frequencies and wondered who they might be. Thanks to a tip by Tim Tyler, I visited a few Web sites at <http://www.rl.af.mil:8000/index.html> and at <http://www.ers.rl.af.mil/forestp.html>. It appears that RL Base is most likely Rome Labs (RL) headquartered at Griffiss AFB, New York. Rome Labs is one of the U.S. Air Force's "Super Labs" involved in the advance of the science and technologies of C4,I (Command, Control, Communications, Computers, and Intelligence) and their transition into systems that will meet USAF needs. The Rome Laboratory of the Air Force Material Command maintains several off-base research facilities around Griffiss AFB, and at Hanscom AFB, Massachusetts (home of the Electronic Systems Center, or ESC).

Emblem of USAF Rome Labs, NY.

Near Griffiss is the Forestport Research Facility, located in northeastern Oneida County. It is a unique, very low frequency/low frequency (VLF/LF) high power (100000 watts) transmit and test facility capable of supporting research and development test programs and experiments in the VLF/LF spectrum. The Forestport facility has a 1200-foot antenna tower for transmission of CW, as well as clear and encrypted messages. The facility also has indoor and outdoor high voltage test capability where insulators and corona hardware can be tested at voltages of up to 270000. Forestport is used to support the LF/VLF segment of

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Verification Stamp

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HIGHBRIDGE SOMERSET

Portishead Radio Maritime and Aeronautical Communications Centre

Thank you for your reception report which has been found to be correct and is hereby verified.

Date of reception 5.9.97 Frequency 4.384 MHz Time 0121z

Signature Stephen D Fell

QSL received by Allen Renner (PA) from Portishead Radio, UK.

the Air Force's Minimum Essential Emergency Communications Network (MEECN) and the Navy Take Charge And Move Out (TACAMO) program, as well as the Navy High Voltage Insulator test program — according to public information on these facilities, although the HVI test program is thought to have ended some years ago. Forestport is the only VLF/LF Research Facility in the Department of Defense.

The Ava Research Facility in northern Oneida County is used to conduct High Frequency (HF) Over-the-Horizon back scatter (OTH-B) research and development, ionospheric characterization, frequency management, systems and subsystems test and evaluation, and general HF operational and experimental communication testing. The unique 300-acre facility has several large antennas and high-power transmitter systems equipped to accommodate any HF operational or research project. HF soundings are provided to support a variety of propagation and communication experiments and are used as a tool for frequency management of the OTH-B radar system.

The 300000-watt high power transmitter at Ava, in conjunction with the large aperture HF linear receive antenna at the Verona Research Facility, make up the Rome Laboratory Verona/Ava Linear Array Radar (VALAR) experimental HF test bed. HF sounding experiments are provided to support a variety of HF propagation studies. Short-range soundings are provided on a routine basis by use of a "chirp sounder" and by use of beacons or transponders. Considering all this, I strongly suspect "RL" is Rome Labs.

While on the topic of the USAF, according to the *Air Force News Service* more changes are coming. Those that may affect your HF listening include:

• At Edwards AFB — The 412th Test Wing will gain two F-22 Raptors and will lose one NC-141A, one EC-18 (ARIA call signs), and one EC-135 aircraft.

• Travis AFB, CA — The 60th Air Mobility Wing will continue with the drawdown of the C-141 aircraft.

• Moody AFB, GA — The 41st Rescue Squadron will gain six HH-60 helicopters. Moody will begin accepting T-38C aircraft in FY 00 (for a total of 48 aircraft in FY 2001).

• Robins AFB, GA — The 93rd Air Control Wing will gain three E-8C aircraft.

• Andrews AFB, MD — The 89th Air Wing has received the first of the new C-32A executive transports sporting the familiar "blue and white" paint scheme of 89th Airlift Wing aircraft. The 89th received two C-32As in late March. Two other C-32As will be delivered in October. The four aircraft will replace the aging fleet of C-137s the squadron now flies to transport the Vice President, Cabinet members, and Congressional delegations around the world. The new aircraft are known to the civilian world as the Boeing 757-200. So listen for some new SAM (Special Air Mission 89th Wing call sign) numbers.

• Martin State Airport, MD — (Air National Guard) will convert from eight C-130E to eight C-130J aircraft beginning in early FY 99.

• Whiteman AFB, MO — The 393rd Bomb Squadron will gain four B-2 aircraft and one T-38 aircraft.

• Offutt AFB, NE — The 7th Airborne Command & Control Squadron will lose seven EC-135 aircraft, finalizing the transfer of the Airborne National Command Post mission to the Navy.

• Reno Tahoe International Airport, NV — The 152nd AW (Air National Guard) will replace two C-130H aircraft with two C-130E aircraft for a total of eight aircraft with the discontinuation of the Pacer Coin mission in early FY 99.

• McGuire AFB, NJ — As part of the fleet-wide retirement of aging C-141B aircraft, the 305th Air Mobility Wing will retire six C-141 aircraft.

• Holloman AFB, NM — The 7th Training Squadron will inactivate, transferring six of its nine F-117 aircraft to the other squadrons. The remaining three F-117 aircraft will be placed in "attrition reserve." Additionally, the 48th RS will inactivate and move its six HH-60 helicopters to other Air Force locations.

• Tinker AFB, OK — The 963rd Air Control Squadron will lose one E-3 aircraft.

• Luis Munoz-Marin International Airport, PR — The 156th FW (Air National Guard) will convert from a 15 aircraft F-16A/B fighter unit to an eight aircraft C-130E unit in early FY 99. The unit will also be required to activate an aerial port unit to support this new mission.

• Charleston AFB, SC — The 437th AW will gain six C-17 aircraft.

• McChord AFB, WA — Again, as part of the fleet-wide retirement of aging C-141 aircraft and beddown of new C-17 aircraft, the 62nd AW will retire two C-141 aircraft and gain its first C-17 aircraft.

In Coast Guard news, the U.S. Coast Guard recently held a commissioning ceremony for the Coast Guard Cutter *Dependable* at the Integrated Support Command. The 29-year-old, 210-foot cutter recently underwent major repairs and renovations that will extend its service life by 15 years. Also the U.S. Coast Guard has launched the fourth of its new 175-foot Keeper Class buoy tenders, the USCGC *Marcus Hanna*. The *Marcus Hanna* will be homeported in South Portland, Maine. Its construction began in September 1996 and delivery was scheduled for December 1997.

Presently, the Coast Guard plans to construct 14 vessels. Three Keeper Class vessels already have been launched. They

are the *Ida Lewis*, *Katherine Walker*, and *Abbie Burgess*. These vessels are named for famous American lighthouse keepers.

A lot of readers ask about what equipment I use. They also keep telling me they will send their shack photos when I run one of mine. Well check it out! My setup here has taken me some time to assemble and is really not that exotic. For SSB logs, I use an ICOM R-72 with an 85-foot (25.91-meter) longwire antenna mounted at 35 feet (10.67 meters), end-fed with RG-58 coax. For digital logs, I use an ICOM R-71A with an inverted "L" center-fed 100-foot (30.48-meter) antenna, also fed with RG-58, and with the M-1000 or the Hoka Code 3 as decoder. The Hoka sits in my old 386/20 computer while the M-1000 is comfortable in my Pentium 90 machine in a DOS box under Windows 95. A third computer, a 386/25 laptop is a recent addition (I found it cheap!), and it controls the R-72 using ScanCat software. All of the computers are properly grounded, and luckily I have little problem with noise from them on the radios.

Digital News

Via the WUN Club and Day Watson, their "UK Maritime" column editor, we heard the sad news that Bracknell Meteo have ceased their RTTY transmissions. This was confirmed by a phone call to the Met Office made by Day. The frequencies affected are: GFL26, 4489.0, GFL22 6835.0, GFL23 10551.3, GFL24 14356.0, and GFL25 18230.0 kHz. Apparently, there are no plans to end the Bracknell facsimile broadcast at this time.

Globe Wireless reports that LFI, Norway; LSD86, Argentina; and 8PO, Barbados, have come on-line and are fully operational now. **Table 1** is the present Globe Wireless Frequency list and Traffic List Broadcast Schedule.

Reader Mail

We're glad to welcome back another "RD" to the column, R.D. Carter (North Carolina) who uses a Kenwood R-1000 with a PK232MBX, an R-5000 with a M-400, and a Drake R-8 with an M-6000 in his shack.

Clarence Thompson (Texas), uses a Drake R8, R8A, a Stewart-Warner R390A, and a JRC535D with end-fed longwire antennas for his listening.

Nolan Tucker (Oregon) notes that regarding the 5598 logging in the Dec. 97 column, the ASPEN call has been a non-tactical call-word for the SR-71s since "time immemorial." The call was in use in 1965 when Nolan was an air traffic controller. The flights were given call signs in the order of their daily departures from Beale AFB, like ASPEN 30, ASPEN 31, etc. The call-word DUTCH was used by the famous Lockheed "Skunk Works" for SR-71 and YF-12 aircraft being flown by them. When Nolan worked them, altitudes were classified and altitude reports were sent in a coded format. For example, the altitudes of 60,000 (FL600), 70,000 (FL700), 80,000 (FL800), and 90,000 (FL900) would each be assigned a random letter for each of the four altitudes, like N, T, H, and K. So 72,000 feet would be reported as Tango 2.

Bill Smith (California) suggests that an interesting amateur net ute fans may want to listen to is the U.S. Coast Guard Amateur Radio Net on 14300.0 kHz, and 14313.0 kHz as secondary. The CG HQ Amateur Radio Station is K4CG. Some recent check in's included the USCGC *Polar Star,* currently on station in McMurdo Sound, Antarctica. Net time is 1700 UTC Saturdays.

Steven L. Hildebrand (Illinois) reports that the "IS1HT" mystery beacon on 1740 kHz comes in fairly well in the Chicago area, with a slow fade in and out. Any help readers can provide on the ID and location of this beacon would be greatly appreciated.

Bill Farley (New Mexico) kept hearing beacon LXV on 379 but found no listing anywhere. Suspecting it was Leadville, Colorado, but now on 379, Bill and his son-in-law hopped in the Cessna, flew up toward Leadville, and can now confirm that the frequency is 379 for LXV. The airport there says it's listed as Lake, Colorado. Mystery solved. Bill is also hearing IS1HT on 1740.5 real loud day and night. Now on with the show . . .

UTE Loggings SSB/CW/DIGITAL

209: MT, Chibougamav, PQ, Can at 0315. (AR) HOE, Homerville, GA at 1410. (WP)
224: VWD, West Dover, VT at 0332. (AR)
248: BRY, Bardstown, KY at 0404. (RH)
254: FPY, Perry, FL at 1432 (WP)
257: FWC, Fairfield, IL at 0332. (RH)
260: MTH, Marathon, FL (Vaca Key) heard at 1440. (WP)
263: DYQ, Greenville, TN at 0455. (RH)
266: YFH, Ft. Hope, ON, Can at 0455. (AR)
277: YLC, Kimmirut, NWT (ex Lake Harbour) at 0233. (RH)
280: GZV, Graford, TX at 0316. (BF)
290: YYH, Taloyoak, NWT (ex Spence Bay) at 0316. (RH)
300: BHN, Barahona, Dominican Republic at 0522. (AR)

Abbreviations Used For Intercepts

AM	Amplitude Modulation mode
BC	Broadcast
CW	Morse Code mode
EE	English
GG	German
ID	Identification/Ied/location
LSB	Lower Sideband mode
OM	Male operator
PP	Portuguese
SS	Spanish
tfc	Traffic
USB	Upper Sideband mode
w/	With
wx	Weather report/forecast
YL	Female operator
4F	4-figure coded groups (i.e. 5739)
5F	5-figure coded groups
5L	5-letter coded groups (i.e. IGRXJ)

314: NDB "F," Farallon Island, CA marine NDB at 0348. (BF)
320: TY, Tyler, TX at 0420. CLK, Clinton, OK at 0356. (RH)
318: At 0510 NDB "HFY," Indianapolis, Indiana. (SW)
323: BSD, St. Davids Head, Bermuda heard at 0455. (AR)
326: PKZ, Pensacola, FL at 1450. (WP)
332: FIS, Key West, FL at 0515. (AR)
334: BNR, Findlay, OH (ex 209) at 0420. (RH)
335: SV, Savannah, GA at 1501. (WP)
338: MRK, Rayville, LA at 0518. (AR)
350: NY, Enderby, BC at 0506. (RH) TA, David, Republic of Panama at 0307. (BF)
353: HOT, Higuerote, Venezuela at 0325. (AR) NDB "J," San Julian, Cuba at 0308. (BF) F7, Georgian Bay, ON at 0430. (RH)
365: DYB, Summerville, SC at 1514. (WP)
369: ZDX, St. Johns, Antigua at 0448. (AR)
379: LXV, Lake, CO. (BF)
380: UCY, Cayojabo, Cuba at 0412. (RH)
387: PV, Providenciales, Turk & Caicos Isls at 0610. (AR)
404: YSL, St. Leonard, NB at 0430. (RH)
413: OEG, Golden Eagle NDB, Yuma Proving Ground, AZ. (BF)
420: CEK, Crete, NE at 0248. (BF)
423: OC, Ocala, FL at 1522. (WP)
450: PPA, Puerto Plata, Dominican Republic at 0301. (AR)
476: CLA, Havana, Cuba w/tfc list in CW at 0228. (WP)
515: RRQ, Rock Rapids, IA at 0312. (AR)
526: ZLS, Stella Maris, Bahamas, monitored at 0311. (AR)
657: YL/North Korean nbr stn in powerful AM start at 1500 w/martial music, then into nbrs. Also noted on 3250 kHz. These are famous Radio Pyongyang's frequencies. (TY)
1610: TIS WPAN997, New York State Tourism & HAR stn at 0450 in AM. (AR)
1620: TIS WTJQ, Cleveland Hopkins Int'l, OH at 0309 in AM. (AR)
1630: Michigan DOT HAR stns WPJR341 & WPJR342 w/ID test tapes at 0113 & 0117 in AM. TIS JFK Int'l Airport, NY (inbound HAR stn) at 0448 in AM. (AR)
1685: MER-E, aerobeacon, Mercaderes, Columbia at 0447. (AR)

Table 1. Current Traffic List Schedule And Frequency List For Globe Wireless Stations

CW

WNU EVEN H+55 KPH ODD H+00 WCC EVEN H+40

SITOR

Call	Time
A9M	ODD H+35
KEJ	EVEN H+15
KPH	ODD H+00
SAB	EVEN H+35
VCT	ODD H+05
VIP	EVEN H+45
WCC	EVEN H+40
WNU	EVEN H+55
ZLA	ODD H+45
ZSC	EVEN H+25
8PO	EVEN H+05, 4 and 16 MHz

GLOBAL RADIO NETWORK CHANNELS
SELCAL 1094

CH	SHORE	SHIP	STN
414	4219	4181.5	A9M
10901	8541	8302.5	A9M
11301	12668	12373.5	A9M
11701	17066.5	16557.5	A9M
11902	19726	18853.5	A9M
10501	4300.4	4154.5	KEJ
625	6326	6275	KEJ (NO BCSTS)
830	8431	8391	KEJ
1265	12611.5	12509	KEJ
1673	16842.5	16719.5	KEJ
403	4211.5	4173.5	KFS
603	6315.5	6264	KFS (NO BCSTS)
803	8417.5	8377.5	KFS
1203	12580.5	12478	KFS
1247	12602.5	12500	KFS
1647	16829.5	16706.5	KFS
2203	22377.5	22285.5	KFS
808	8420	8380	KHF
1301	12629	12527	KHF
1726	16869	16751	KHF
413	4216	4178.5	KPH
613	6320	6269	KPH (NO BCSTS)
813	8422.5	8382.5	KPH
822	8427	8387	KPH (NO BCSTS)
1213	12585.5	12483	KPH
1242	12600	12497.5	KPH (NO BCSTS)
1622	16817.5	16694	KPH
2238	22395	22303	KPH (NO BCSTS)
247	1930	2653	LFI
10505	4339	4154.5	LFI
10705	6467	6250.5	LFI
10907	8683.5	8326.5	LFI
11306	12678	12415.5	LFI
11703	17204	16566.5	LFI
10504	4326	4160.5	LSD836
10904	8459	8311.5	LSD836
11304	12736	12379.5	LSD836
11702	16976	16560.5	LSD836
11901	19706	18850.5	LSD836
228	1620.5	2155.5	SAB
10503	4259	4166.5	SAB
626	6326.5	6275.5	SAB (NO BCSTS)
837	8434.5	8394.5	SAB
1291	12624	12522	SAB
1691	16851.5	16728.5	SAB
632	6329.5	6283.5	VCT (NO BCSTS)
838	8435	8395	VCT
1263	12610.5	12508	VCT
1676	16844	16721	VCT
406	4213	4175	VIP
806	8419	8379	VIP
1206	12582	12479.5	VIP
1210	12584	12481.5	VIP
1606	16809.5	16686	VIP
414	4216.5	4179	WCC
621	6324	6273	WCC (NO BCSTS)
816	8424	8384	WCC (NO BCSTS)
821	8426.5	8386.5	WCC
1221	12589.5	12487	WCC
1238	12598	12495.5	WCC (NO BCSTS)
1621	16817	16693.5	WCC
1638	16825	16702	WCC (NO BCSTS)
401	4210.5	4172.5	WNU
627	6327	6281	WNU (NO BCSTS)
819	8425.5	8385.5	WNU
1257	12607.5	12505	WNU
1657	16834.5	16711.5	WNU
402	4211	4173	ZLA
602	6315	6263.5	ZLA (NO BCSTS)
802	8417	8377	ZLA
1202	12580	12477.5	ZLA
1602	16807.5	16684	ZLA
408	4214	4176	ZSC
617	6322	6271	ZSC (NO BCSTS)
831	8431.5	8391.5	ZSC
1244	12601	12498.5	ZSC
1619	16816	16692.5	ZSC
1824	19692.5	18882	ZSC
409	4214.5	4176.5	8PO
634	6330.5	6284.5	8PO
834	8433	8393	8PO
1273	12615.5	12513	8PO
1671	16841.5	16718.5	8PO
1832	19696.5	18886	8PO

1700: TIS, JFK Int'l Airport, NY (outbound HAR stn) at 0446 in AM. (AR)
2270: YL/EE, Mossad, sending SYN2 in USB hrd at 2200. First time I've ever encountered "SYN" Mossad stn on this freq, used to be JSR. (TY)
2582: VAR, Fundy Coast Guard Radio, Can at 0437 in USB wkg F/V Sandra Elizabeth w/distress incident, vsl has large hole in wheelhouse off Brown's Bank, Fundy set up call to Rescue Center & at 0456 adv vsl to switch to 2182 & Ch.16 VHF for further check-in's. (AR)
2670: NMF2, USCG Group Woods Hole, MA, w/marine info bdcast at 0407. NMB, USCG Charleston, SC w/same heard at 0420. (AR) NMQ9, USCG Group Long Beach 0505 USB w/notice to mariners broadcast. (DW) All in USB.
2749: VAR, Fundy CG Radio, Can at 0157 in USB w/MIB. (AR)
2998: San Francisco Aerardio wkg various a/c in USB at 1410, being heavily QRMed from Tokyo Aeradio an the same freq. (TY)
3016: Shanwick Radio at 0339 in USB with Selcals, etc., wkg various a/c. (SW)
3150: Mossad YL/EE in USB at 0435 w/ 5FGs, // 3417 // 5437 kHz. (DB)
3436.5: Unid stn 2RC8 rptng "8L6S DE 2RC8" in CW at 0935. Also noted on 4270 kHz. From Mainland China? (TY)
3494: New York ARinc (NA-CC-LDOC) at 0208 in USB wkg United 940 w/selcal ck AQ-BG. (*Editor*)
4012: 5ST, Antananarivo at 0240 in ARQ-E 48/400 (C.I. TPA) meteo. (FH)
4106: Cuban CW net at 1250, multiple stations, poss ex-4868 range where they've been absent for a couple of weeks. (AWH)
4149: CAMSPAC at 0012 in USB wkg 1716 (HC-130H7), has weak but readable on this U.S. Limited Coast Station frequency. (DW)
4177: S6IB, M/V Edward Oldendorff at 0145 in ARQ w/sign-on "02755 EDDW X" & several tlxs. (DW)
4226: Unid CW net PINE6 wkg SAW6 at 1330, hand keyed, QSA? & QTC 4 NR 001 14 GR xx into 5FGs. At end "QSL?" & GBOM. A little different than the Cuban nets in ops procedures, closing & c/s's suggest EE speakers, maybe this is MIL/police somewhere in Caribbean? Will be watching this one further. (AWH)
4244: PPR, Rio de Janeiro Rdo at 0843 in CW w/QSX mkr. (WP)
4321: Unid voice two-way conversation in USB at 0614 (in progress), language is not Japanese, Korean, Chinese, Slavic, Pidgin, Germanic, or Romance. Could be Mongol, wiped out by QRM from Carrier on 4320 at 0630. (GVS)
4339: LFI, Rogaland radio heard at 1830 as Globe Wireless stn in ARQ/FEC (ships on 4154.5). (FH)
4350: TBB, Ankara Naval, TUR at 0341 clg TBDJ in CW. (WP) (*not too bad for 4 MHz! — Editor*)
4379: Unid, poss Mexican Military at 0540 in ARQ 100/358 w/online encrypted tfc. (DW)
4490: Cuban voice net at 0027 in USB, RP431, RP692, 19, 578, 205, 208, 340, 840, 141, 449, 691, etc, busy net! These RP calls are the distinguishing feature, but never noted previously; also hearing them on 5293 & 5204 in USB, all seeming new freqs. Maybe security operation due to Pope visit? (AWH)
4625: 24 hrs/day buzz, sounds like time signal station, but every 15 mins into warble. (RK)
4666: San Francisco Aeradio wkg various a/c in USB at 2115. (TY)
4716.5: ZOMBIE (helo) wkg VOODOOHUT at 1427 in USB w/comm checks, in clear and in green. (AWH)
4739: USN PAPA 3 ALPHA (male/female ops) working in the clear & in the green FLYING TIGER 753 & 751. Other stations included BLUE STAR, GOLDEN HAWK (USN VP Sqd CP), BOLT 750, 8 JULIET PAPA. (RM)
4742: SAM 203, at 2352 in USB outbound from Howard AFB, wkg Andrews VIP for pp to Meteo re: 0045z arrival Andrews AFB. (JJ)
4770: YL/North Korean (R.Pyongyang) w/ 5FGs in powerful AM at 1400. Also noted on 5870 kHz. Another day CC/YL nbr stn heard in USB at 1900. (TY)
5000: YVTO, Time Station Caracas at 0504 in AM w/time ann in SS. (DW)
5152: SAM 202 & SAM 682 heard wkg Andrews VIP & each other on F-486 at 0320 in USB. (JJ)
5320: W7E, USCG vsl at 0200 in USB wkg CG Group New Orleans, QTH 8nm, bearing 030 from benchmark C. Will remain in the area throughout the night & will conduct boardings. (DW)
5370: Honduras net w/LIMON wkg TEGUCIGALPA at 1404 in USB, SS/OM QSO, other stations also incl some Mosquito coast EG, some HRxxx call signs mentioned. Some machine-gun CW used on 5371 also. (AWH)
5430: 3ZC wkg FIGHTING TIGER 13, at 2300 in USB w/clear & ANDVT tfc. (AWH)
5550: New York Radio in USB wkg various flights w/Selcal cks & freqs, flts hrd include American 688 & American 156. Another day w/flts of American 6987, REACH Victor 9, American 55 cleared from JFK to San Juan & LL 78. What airline is LL? (SW) (*prob. USN "Navy LL 78," P3 of VP-30 NAS Jax, FL — Editor*)
5680: Watchdog Alpha November, & Watchdog Delta Hotel wkg Kinloss Rescue (G) at 1223 in SAR mission. Koksidje Rescue (BEL) in r/check w/Belgian Air Force 93 at 1504. Bodo Rescue (NOR) w/met. report for Sabre 31 at 1422. Shanwick in r/check w/Kinloss Rescue at 1451. Navy 707 (RN Sea King helo from RNAS Prestwick) asking for r/check from Kinloss at 1505. (AG)
5693: USCG Miami Ops wkg w/"Whiskey 2135" at 2255 in USB re a ship called the "Freedom 2," Miami Ops told 2135 to QSY to 5696 & stand by, CAMSLANT then up on 5696 to adv that "D7" had an overdue a/c, & 35 was detailed to ck for it. CAMSLANT began referring to 2135 as "Rescue 2135. (SH)
5700.4: HABITAT, PATWING TEN NAS Whidbey Island at 0048 in USB wkg C8B. Into "green" comms (ANDVT). (DW)
5711: KING 04, C-130, wkg Moffett Rescue w/ops report at 0333 in USB. (JJ)
5714: YL/EE, poss New Zealand Civil Defense, as Auckland, Wellington, other cities mentioned, followed by sets of numbers, hrd 0304–0306 in USB. (RK)
5717: RESCUE 456 wkg 'RCC' via Vancouver Military in USB at 0255 about 'ELT' on helicopter at Prince George being activated. Apparently chopper had gone down. QSYed to 6694, then 3152. (RK)
5760: AA6EN Net Control at 1500 in USB w/ AAT4YE Houston,Tx, AA6RW, Sheveport, LA, AA4EXJ Mississippi w/check ins. (CT)
5820: YL/EE, Mossad, sending YHF in USB at 1400. Also noted on 7918 kHz. (TY)
5841: 34 CHARLIE heard at 1934 wkg PANTHER in USB re they are airborne w/6 POB. (MF)
6190: Cuban Atencion spook at 1500 "110 02" old style callup, 3245 on at same time w/ newer format "Atencion 11152 52183 44482" callup, some days just open carrier here at 1500. (AWH)
6483: PBB, Dutch Navy, Den Helder, The Netherlands at 0710 in RTTY 75/850 w/ CARB bdcast. (IJ)
6501: CAMSLANT Chesapeake at 1915 passing wx to CG Cutter Bramble. (MF) At 0345, CAMSLANT w/high seas forecast for the Atlantic. (SW)
6586: New York in USB at 2308 wkg USAir 1970, Condor 051, Delta 502, American 2294 & UPS 5502. (DB)
6589: Cuba, The "6589" voice net heard at 1436 in USB, no tfc, OM/SS w/long counts into quiet. 5688 babbler active w/tfc at same time. (AWH)
6604: Gander Radio at 0350 in USB w/ VOLMET brdcst. (SH)
6640: United 938 at 0149 in USB wkg New York ARINC, on the ground at Dulles, will be heading to London, selcal ck, AR-BC, N779UA B777. (DW)
6645: Magnetic Fields station at 1900 in AM, 2 mins of Jean-Michel Jarre's "Magnetic Fields Part-1" then YL/EE w/5FGs. (RK)
6694: CFH, Halifax Military, NS, Can at 0130 in USB clg RESCUE 110 w/pp RCC, 110 reports is on scene along w/HMCS Montreal & req status of RESCUE 314 re SAR for sinking vsl. (*Editor*)
6706: CHR, Trenton Military, Ont, Can at 0316 in USB wkg CanForce 3936 re departed Winnipeg 0225, est Montreal Mirabel (CYMX) 0605. (*Editor*)
6712: Offutt here w/25 character EAM at (0556). Andrews w/2 EAMs 25/26 characters long at 0733, both in USB. (RM)
6730: SAM 29000, active as Air Force 1 back-up, inbound Andrews AFB, wkg Andrews VIP for signal checks at 0200. (JJ) AUSSIE 025 (YL op) wkg RAAF Sydney, NSW, AUS for radio cks at 0846, here from 8989. (RM)
6741.7: TSBE, Tunisian Navy Combattante III M-class Fast Attack Missile Boat "PLM Carthage" (503) tuned at 0405 in ARQ w/tfc in FF. (*Editor*)

6751: JJG8, Japan Navy Atsugi, YL opr, wkg "Five Kilo Charlie Lima" w/coded msg in heavily accented EE in USB at 0315. (TY)
6754: CANFORCE 88 monitored at 2312 in USB clg Trenton Military. No joy. QSY to 11232. (DW)
6761: JAMBO 23, B52G, 2nd BW Barksdale AFB, LA at 0500 clg ELVIS Command Post (164th ALW, TN ANG, Nashville, TN), no joy here. TURBO 66, KC-135, 22nd ARW, McConnell AFB, KS at 1553 clg SENTRY 31, E-3 AWACs 963 AACS, 552 ACW, Tinker AFB, OK, app looking to pass them some gas. (*Editor*)
6779: DRDO, FGS U21 (S-170) at 0022 in USB, German Navy (Bundesmarine) attack sub, wkg DHJ59 (Wilhelmshaven Naval) w/ RTTY coordination in EE/GG. (*Editor*)
6780: SS/YL at 0337 in AM w/5FG's. (DB) (*CIA Counting stn — Editor*)
6840: EE/YL in AM (at 40db!) at 1905, first gave three digits then counted one through nine, then into 3/2 digits. Off 1930. (HO)
6950: VLM66, 85 & 94, possible Australian 4 x 4 club stations, at 0930 in USB w/3 OMs talking about the recent flooding in the Northern Territory (NT), this freq is usually used by VJD RFDS, Alice Springs NT. (IJ)
6959: Licolnshire Poacher at 2203 in USB YL/EE rptg 65150. (DB)
7305: JMH2, Tokyo Meteo at 1032 w/FAX 120/576 chart. (DW)
7360: RGH77, Arkhangelsk in RTTY 50/ 1020 meteo msgs at 0030. (FH)
7501.5: BLACKLIST (USMC) wkg unid stn in USB at 2110. (JJ)
7535: NHOV, USS Saipan (LHA-2) heard at 1322 in USB wkg SESEF Norfolk w/HF testing. (*Editor*)
7580.5: Unid Pacific Island Station heard at 0655 in USB w/YL & OM in a Pacific Island language. (IJ)
7605.7: France? Unid evenings in ARQ-E3 192/400, ckt LFA has been on 7606.7 & 7608.7 in recent past, presume this same, but not running CdVs now, so not sure. (AWH)
7635: MOCKINGBIRD 11, Mississippi CAP Unit 11 at 2201 in USB conducting net call for each CAP region. Very few responses w/RED FOX: Illinois CAP being the only one audible. MOCKINGBIRD is the old callword for Mississippi CAP units. (DW)
7690: 37-AIR wkg BLACKLIST at 0530 in USB w/a status report. (JJ)
7841.7: RFFXI, Bangui in ARQ-E 192/400 at 2300, prior was 96 bd. (FH) (*I had the same at 0005, circuit XZI — Editor*)
8029: CHARLIE QUEBEC as NCS at 1802 in USB wkg NICT, NOCT, other tactical callsigns w/AAW net for JTFEX 98-1 w/USS John C. Stennis (CVN-74) Carrier Battle Group (CVBG) & USS Wasp (LHD-1) Amphibious Battle Grp (ARG), next fews days calls were Wxxx, then Mxxx. Interesting wargame comms. (*Editor*)
8032: Andrews w/SAM 973 at 0540 in USB w/pp to SAM Command re diplomatic clearance for Austria. (IJ)
8122: Darwin Control at 1106 wkg HMAS Fremantle: Fremantle-Class Patrol Boat 203. HMAS Cessnock, Fremantle-Class Patrol Boat 210 at 1124 wkg Darwin Control for radio ck. At 1148, Darwin Control wkg HMAS Ipswich, Fremantle-Class Patrol Boat 209. HMAS Gladstone, Fremantle-Class Patrol Boat 216 at 1116 wkg same. HMAS Shepparton, Survey Motor Launch 03 at 1053 wkg Canberra Control. (DW)
8375: New Star broadcasting, Taiwan, YL/CC w/5FGs heard in AM at 1300. Similar but non-parallel transmission heard on 8300, 9725, 11430, 13750, 15338 kHz. (TY)
8670: IAR Rome Radio Italy at 1925 in CW w/VVV Marker. (IJ)
8740: SVN, Athens Radio, Greece at 2308 in USB YL/Greek w/voice frequency marker, ann of Hellenic Telecommincations Organization (OTE) services separated by door-bell like chime. (*Editor*)
8861: Khabarovsk Volmet Russia, w/avian wx report in RR in USB at 0345. (TY)
8913.7: MFA Cairo in ARQ at 2150 w/AA msg. (FH)
8942: Hong Kong Aeradio wkg various aic in USB at 1215. (TY)
8968: Offut Global working ECHO PAPA 766 w/pp to Brunswick Metro at 2202 in USB. (RM)
8971: At 0139, BLUE STAR TECH CONTROL radio-checking SOUTH ROCK/ ROCC. (Tactical Support Center Puerto Rico's maintenance section r/c'ing an ops center in the Caribbean). At 1624 GERMAN NAVY 4739 clg OHMP (I think) for a radio ck. Both in USB. (TT)
8983: At 2016 CAMSLANT in USB w/pp for RESCUE 1718 to MIAMI OPS District 7 re ELT & Flare from the "JENNY SEA," vsl was enrt to Ambergris Cay. (MF)
8989: CANFORCE 3294 at 2232 clg Trenton Military. No joy. QSY 13257. (DW) RAAF channel w/voice traffic from unid AF stn for AUSSIE 026, AUSSIE 024 & AUSSIE 025 at 0812. Changed to 84 Delta (6730.0). (RM) Both in USB.
8992: At 1842 HARDROCK 01 in USB requesting DSN 424-1110 for a pp to an off-base commercial number via MacDill. Asked if it was an official call, HARDROCK 01 adv it was a morale call, MacDill adv they were not allowed to do morale calls & to QSY to 11217, but no traffic heard. (USAF Tactical Air Control Party/Air Liaison Officer?). (TT)
9007: Trenton Military at 1904 in USB wkg w/pp for CANFORCE 2770. (MF)
9010: CHARLIE OSCAR 415 wkg Vancouver Military at 0004 in USB, adv to "close watch & pass further traffic upon landing." (0004). (RM)
9016: LASTSTAND wkg NIGHTWATCH 01 for comms checks while NW 01 also in comms with Andrews VIP on 11053.0 at 2310 in USB. (JJ)
9019: COREGATE 47 wkg PART TIME at 2124 in USB in the clear & in the green sending data. Then passes he has nothing further, & "out." (RM)
9023: SIDECAR, Canadian NORAD SOCC, monitored at 2311 in USB wkg SIDECAR X-Ray. SIDECAR X-RAY is transmitting as NCS, mode 3. (DW)
9263: YL/EE, Cherry Ripe nbr stn, w/5FGs in USB at 1200. Also noted on 15616, 12056 kHz. (TY)
10051: Gander Radio Volmet at 0159 in USB w/condition reports for various Canadian cities. (SW)
10162.5: YIL71, INA Baghdad, Iraq at 1959 in RTTY 75/400 w/nx in Arabic. *(Editor)*
10352: CIO MOSSAD Station at 0645 in USB w/YL repeating CIO2. (IJ)
10393.7: RFFVA France at 2335 in ARQ-E3 200/400, tlx: VZCZCFDX001, RR RFFVAEA, DE RFFVA 0400000, ZIC FDX029 ZID ESK011, NNNN. Notice the message w/a 0000 time hack was received at 2335; I thought these guys were using GMT, but maybe it's Paris time. If you watch 7822.2 during the same time period you'll see (from the archives): VZCZCFDX001, OO RFFVAE, DE RFFVA 0290000, CR DU 28 JAN 98, ZIC 018, ZID 012, NNNN. So, clearly from this log and the one above, there are two independent FDX circuits to Dharan, one each to RFFVAE (7822.2/16167.7, w/return link DET) and RFFVAEA (10393.7/16310.2, w/return link ESK). But on both circuits, almost all tfc is addressed to both RFFVAE and RFFVAEA, so I'm not sure why they bother. (AWH)
10586: SAM 971, DV-2 + 36, inbound Cape Verde, wkg Andrews VIP at 0126 in USB for pp to JetPlan re: poss alternate flight plans into Norfolk NAS, Langley AFB, Roosevelt Roads NS, & other locations, due to wx at Bermuda. (JJ)
11175: At 1710 BATON 88 (PA ANG 193rd SOG EC-130 Commando Solo) clg MAINSAIL. When Thule responded, 88 adv they were an EC-130, & wanted to QSY to a discrete frequency for comm checks. Thule adv they were unable to comply w/the request. At 1711 WOLF 702 (S-3B Viking) req pp to commercial number via Andrews. At 1714 Andrews Global adv an answering machine had answered the line, so pp was terminated. At 1721 ARMY 40163 w/pp via Offutt GHFS, 40163 adv their ground party to contact "the 15th MI" (15th Military Intelligence Battalion) & adv 40163's ETA of 1155 local. 163 also advised they should be back at (Fort) Bliss at 1400L. RU-12 GUARDRAIL? At 1643 SHADOW 07 (MC-130P COMBAT SHADOW) w/pp to (European) DSN via Thule, 07 asked PROMENADE if 07's 1830Z ARCT was still on. PROMENADE advised that it was, but there would now just be one aircraft to AR. (TT)
11220: Air Force 2 wkg Andrews VIP for signal check at 2142 in USB. (JJ)
11271: At 1927, Thule in USB w/pp for KING 30 to Ramstein meteo. (MF)
11384: San Francisco Aeradio wkg various a/c in USB at 0550. (TY)
12562: URSY, NIS Akademik Boris Petrov at 2352 in RTTY 50/170, a Ukrainian-flagged research ship, w/admin RR tfc to Kaliningrad from Kapitan Zaveryach. (Ed.)
12579: Unid USCG at 1615 in FEC w/navtex info, prolonged idle. (RD)

Tuning In *(from page 4)*

Look at what's been happening in ham radio. Across the board, sales seem to have reached a plateau, and vendors who in the past would have possibly donated prizes are now asking the clubs/organizations to buy the items. It's never easy to corral volunteers when it's hamfest time. You know the drill: everyone wants the annual hamfest, but it's always the same handful in an organization of dozens — in many cases, hundreds — who end up working their tails off.

"Now is the time to talk to non-hobbyists about radio."

Perhaps Lew said it best, " . . . do we put [hamfests] on to bring folks together, to make money, or to promote ham radio, or all of the above?" Perhaps it's time to underscore the importance of promoting our radio hobby, whether it's ham, shortwave, scanning or CB — and its relationship to your community.

Now is the time to talk to non-hobbyists about radio . . . about the benefits of ham and CB radio, and of staying on top of what's going on in town and around the world by scanning and shortwave monitoring; about the excitement of making friends and talking to someone on the other side of the world without wires; and about real-time programming from hundreds of international broadcasters on shortwave! Why not bring someone who's interested in the hobby to a hamfest? Seize the moment, because if you don't, who will? ■

H.R. 2369 Update

We've been following the progress of H.R. 2369, the "Wireless Privacy Enhancement Act of 1997," which was introduced last year by Rep. Billy Tauzin (202-224-3121). As of October 29, 1997, the bill was forwarded by Subcommittee to Full Committee (Amended) by voice vote. It sits there waiting for further action.

It's expected that 2369 will pass quietly through the system before the end of the summer and become law. You'll recall that the bill ammends the Communications Act of 1934, and was ammended after communications hobby professionals and groups made a strong case against the bill in its original form.

12579.5: YLQ, Riga radio tuned at 1230 in ARQ tfc. (FH)
12601: ZSC, Cape Town R. w/sitor free bursts, ID in CW at 2145. (WP)
12789.9: NMG, USCG New Orleans, at 1635 w/120/576 wx FAX. (RD)
12857: 6WW, French Navy Dakar Senegal at 1647 in 75/850 RTTY w/"le brick." (RD)
13062: CLA, Havana Radio, Cuba at 1655 w/CW marker. (RD)
13200: AIREVAC 7007 clg McClellan at 2153 in USB, pp to Travis CP & Travis Metro via Elmendorf, ETA 0025, status A-1, 5 med crew off-load, D-5, 1 pallet, 17 crew, 12 patients. (RM)
13204: PARCH 01 (sounded like) wkg PARCH Control re: weapons telemetry, mentioned alt. 17,500 ft. 1702z (JJ)
13257: CANFORCE 3294 at 2233 in USB clg Trenton Military. (DW)
13270: Gander Radio at 1457 in USB w/automated METAR reports for the North Atlantic & various Canadian cities. (SW)
13285: Beijing Volmet, China, w/avian wx report in vy distorted USB w/distinctive hum at 0216. (TY)
13309: Hong Kong Aeradio wkg various a/c in USB at 0415. (TY)
13330: New York ARinc (NA-CC-LDOC) at 1940 in USB wkg TWA flt w/req to pass new ETA on to op's. *(Editor)*
13970: Unid Papeete Tahiti Station at 0300 in USB w/2 OMs in FF (comes up daily at this time, sounds like it's some official net). (IJ)
14406: The CIA Counting stn w/3+2FGs in AM at 1100. Also noted on 13555 kHz. (TY)
14573: 5AQ70 Tripoli in RTTY 50/390 w/ JANA nx in old AA to 1500. (FH)
14686: 22C, at 1750 in USB wkg PANTHER, DEA Nassau, assigning primary and secondary channels. (DW)
14817.5: JPA INTERPOL Tokyo Japan 0630 UTC ARQ with encryption (IJ)
15000: WWV time signal in AM at 1702. (RD)
15016: At 1655 REACH 4614 w/pp to FURIOUS (Howard AB ALCC) via Lajes Global re Mark 82 bomb leaking a black tarry substance aboard 4614. FURIOUS contacted an EOD specialist at Howard, & was adv that the substance should just be a sealant, and was not hazardous. 4614 adv that several of the Mk 82s on a pallet had been damaged, possibly during loading. (TT)
15034: Edmonton Military at 2234 in USB w/aviation wx. QRT in middle of transmission at 2236. (DW)
15448: U.S. Military battle simulation (Army mentioned) at 1823 in USB w/BANGER as control, wkg numerous other units w/battle status updates. Callsigns included: BARKINGBEAR, WAYSIDE, BALLOON etc.(JJ)
15867: U.S. Customs, COTHEN at 2309 in USB w/unid OMAHA a/c reporting is airborne. *(Editor)*
16084: YL/EE, Lincolnshire Poacher nbr stn, w/5FG's in USB at 1200, w/heavy QRM from RTTY, also noted on 15682,14487kHz. (TY)
16351.7: RFFA, Paris in ARQ-E3 192/400 (IGU) to RFLIG w/5LGs //19418.7. (FH)
16788.5: Unid, Greek? in FEC w/Telos press in Greek monitored at 1433. (FH) *(ship/ship relay — Editor)*
16806.5: NMO, USCG Honolulu in FEC monitored at 1545 w/report of distress signal received on 406 MHz, then wx & time correction info. (RD)
17940: Houston Radio (NA-CC-LDOC) at 2221 in USB wkg Fort Worth 763, w/selcal ck DK-FG, posn, over BOAMAL 2240, FL 290. *(Editor)*
17976: Offut clg MAINSAIL w/26 char EAM bcst at 2336 in USB. JAM 69 clg Offut w/signal checks at 2145. (RM)
18254: SUU Cairo METEO Egypt at 0735 in RTTY 100/850 w/wx synopsis. (IJ)
18402.8: CLP1, Havana, 1816 to 1840 in 50/490 RTTY SS msg, then "circular de Prensa." (FH)
18800: Unid Philippines ship 1857 to 1922 in FEC w/EE nx relayed from Manila. (FH)
19463: STS22, Khartoum in 50/170 RTTY SUNA nx in FF at 1615. (FH)
19860: MGJ, Royal Navy, Faslane, England at 0740 w/75/850 w/CARB bdcast. (IJ)
19884: YL/EE, Cherry Ripe nbr stn, w/5FGs in USB at 0000, also noted on 13865, 15616 kHz. (TY)
20017.9: CLP1, Havana, Cuba in 75/450 RTTY EE nx about the Pope & Castro at 1528, ltr switched to 50 bd w/o stopping. (FH)
20019.7: Unid, poss Egyptian Embassy 1727 ARQ 100/425 in "receive" mode, no tfc sent. *(Editor)*
20215: VDD, Halifax monitored at 1506 in 75/850, use to sign in the clear, now mostly encryption. (FH)
20890: OMAHA 85 at 2116 in USB passing posn report to unid adv 8 miles out from target & closing. (JJ) *(Nice catch! — Editor)*
22108: YL/EE, Cherry Ripe nbr stn, w/5FG's in USB at 0000. Also noted on 15616,19884 kHz. (TY)
22861.7: CCS, Santiago at 1815 in 100/850 RTTY 5LG msgs to GSTH, strongest RTTY signal above 17 MHz here. (FH)
22888: DFZG, Belgrade in 75/400 RTTY msg to embassies to 1449. (FH)
26150: NBFM unid, getting a weak IFB audio feed here during random *E*-skip openings, of which there have been several the past week, but never strong enough to ID. (AWH)

This month's contributors: (AG) Alan Gale, UK; (AR) Allen Renner, PA; (AWH) Albert W. Hussein, FL; (BF) Bill Farley, NM; (CT) Clarence Thompson, TX; (DB) Dean Burgess, MA; (DS2) Dwight Simpson, WI; (DW) Dave Wright, TX; (FH) Fred Hetherington, FL; (GVS) Gary Van Sant, OR; (HO) Harold Ort, NJ; (IJ) Ian Julian, New Zealand; (JJ) Jeff Jones, CA; (MF) Mike Fink, FL; (RD) R.D. Cater, NC; (RH) Russ Hill, MI; (RK) Richard Klingman, NY; (RM2) Rick Michaels, Id; (SH) Steven L. Hildebrand, IL; (SW) Sue Wilden, IN; (TT) Tim Tyler, MI; (TY) Takashi Yamaguchi, Japan; (WP) Walt Petersen, FL; and me, ye editor in Ohio. Thanks for another great turn out. ■

Clandestine Communiqué

BY GERRY L. DEXTER

TUNING IN TO ANTI-GOVERNMENT RADIO

Nigerian Clandestines On The Air!

It's been a while since we've been with you, so we have some catching up to do. Let's get right to the news.

Radio (or Voice of) New Nigeria, opposing the current government there, is a new one on the air with broadcasts to Nigeria and West Africa at 0600 to 0629 Sundays on **11955**; to North America on Sundays at 0100 to 0129 on **5910**, and to Central Europe Sundays at 1500 to 1529 on **6175**. The broadcasts claim to be on behalf of the "Nigerian Advocacy Group for Democracy and Human Rights," which is based in Boston. (P.O. Box 202, Boston, 02131.) The group is also reachable via e-mail at: <RadioNnig@aol.com> or <NAGDHR@aol.com>. The broadcasts are being transmitted via Deutsche Telecom, which operates the various Voice of Germany SW sites. This seems also to be the case for the new Ethiopian clandestine mentioned below.

"The Voice of Independent Kurdistan resumed its broadcasts some months ago . . . "

The Voice of Free Nigeria is operating from 1900 to 1959 on **11680.** It's operated by the Free Nigeria Movement from a transmitter believed to be somewhere in North Africa. Ed Rausch in New Jersey noted this station broadcasting in English and vernacular from 1900 to 2000. He notes the address is: Free Nigeria Movement, P.O. Box 441395, Indianapolis, IN 46244. Their Web site is at <http://pw2.netcom.com~fnm>.

Another Nigerian clandestine, **Radio NEDECO**, is being aired over WWCR. Check **5070** from 0500 to 0515 and **15685** from 1945 to 2000 Monday through Friday. The address is National Democratic Coalition, 514 10th St., NW #600, Washington, DC 20004.

The oddly named (for a clandestine) **Rainbow Radio**, which calls itself "the voice of peace and brotherhood," is on the air in Amharic three times a week; for listeners in Ethiopia listen on Thursdays from 1600 to 1700 on **15365**, to Western Europe on Fridays from 0100 to 0200 on **5910** and Saturdays from 1900 to 2100 on **6130.**

Another Ethiopian clandestine is the Radio Voice of One Free Ethiopia, operating in Amharic on **12105**, signing on at 1615 and running until 1715 and apparently coming via a transmitter inside Russia or one of the former Soviet Republics. The address is P.O. Box 5801, Washington, DC 20016.

Voice of the Tigray Revolution is operating on **5500** in the Tigray language from 0400. The carrier and interval signal begin several minutes prior to the hour. A parallel frequency is **6315**.

NEWS
RADIO

Dengê Medya - The Voice of the Land of the Medes"

TRANSMISSION SCHEDULE

Country	RUSSIA
Broadcasting category:	Radio: external
Schedule code:	Radio: RUSRX999
Date of issue:	24 oct. 95
Date of latest update:	26 oct. 95
Name of organisation:	Radyo Dengê Medya

General remarks

Dengê Medya means "Voice of the Land of the Medes" in the Kurdish language (Medes is an ancient name for the Kurdish people). The station operates from a shortwave transmitter in Russia (believed to be at the GPR-2 company's site near St. Petersburg).

It began broadcasting on 20th October 1995. the start of transmissions had been announced the previous day by MED-TV, a Kurdish satellite TV station which broadcasts to the Middle East from London. the announcement had said that the station would be on the air at the times shown below on 9855, 11985 and 15255 kHz. However, broadcasts have only been heard on 9855 kHz.
At present the station is broadcasting what appear to be test transmissions consisting of Kurdish music and very brief announcements in the Kirmanji dialect of Kurdish. It has announced that it will also carry material in Turkish and Arabic.

Name of service:	**RADIO DENGÊ MEDYA**
Main studio centre	

Earnest R. Oney found information about the Kurdish clandestine "Denge Medya—Voice of the Land of the Medes" on a Kurdistan Web site.

Earnest Oney, W4UXE, in Virginia, found information on the Kurdish Web site which indicates that the Kurdish clandestine station Denge Medya—"Voice of the Land of the Medes" was forced to close down some time ago. The group cites a report in the Turkish newspaper *Hurriyet* in April of 1996 that the station had been forced to close. It operated on 9855 via a transmitter inside Russia.

The Voice of Independent Kurdistan resumed its broadcasts some months ago, operating in Kurdish from 0400 to 0530 and from 1400 to 1530 on **6205 variable**. It is the mouthpiece of the Kurdish Workers Party (PKK) and claims to broadcast from one of the Kurdish camps in northern Iraq.

(Continued on page 77)

BY EDWARD TEACH

The Pirate's Den

FOCUS ON FREE RADIO BROADCASTING

From Rock Music To Fake Commercials, It's Pirate Radio Time . . .

Well, it looks as though we've got another great turnout, so let's get right on with it!

Radio Fusion Radio, 6955 U heard from 1815 to 1845 with a DJ team calling themselves "The College Boys direct from the College of Knowledge." The station played the "Macarena" five times in a row. Address given as P.O. Box 28413, Providence, RI 02908. (Dean Burgess, MA)

WMPR, 6955 at 2136. (Dave Jeffery, NY) **6955.4** at 2230 to 2300 with techno-pop. (William Hassig, IL)

Radio Eclipse, 6945 U at 2125 with a special "news of the week" broadcast. They said they now have a "glossy QSL card" and a different QSL for every broadcast. Also heard on **6955 U** at 1735 with rock and roll news and views. Also at 1434 to 1500. (Lee Silvi, OH) **6954.84 U** at 0001 with rock by the "Dead Milkmen." (Hassig, IL) **6953** at 1537 with rock. (Jeffery, NY)

WLIQ, 6955 U at 1845 with country music, ID, unreadable address. Off at 1912. (Jeffery, NY)

KMVS — Cannabis radio, 6955 U at 1913 with hard rock, drug-related songs, talk about the music industry, commercial for the ACE and mention of their Belfast (NY) address. Off at 1959. (Jeffery, NY)

The Howard Stern Experience, 6955 U at 2015 with recordings of Howard Stern shows and ID. Providence address. Another occasion at 1817 to 1820 off. (Jeffery, NY)

Betty Boop Radio, 6955 at 0000 with a repeat of their first broadcast. Also heard at 1758, also with a first broadcast repeat. (Silvi, OH) **6980.7** at 1415 with Betty singing "Chattanooga Choo-Choo." (Jerry Coatsworth, ON)

Reefer Madness Radio, 6955 at 1842 with their usual format. (Silvi, OH) 1844 with talk about marijuana, funny ads, ID, off at 1914. Belfast address. (Jeffery, NY)

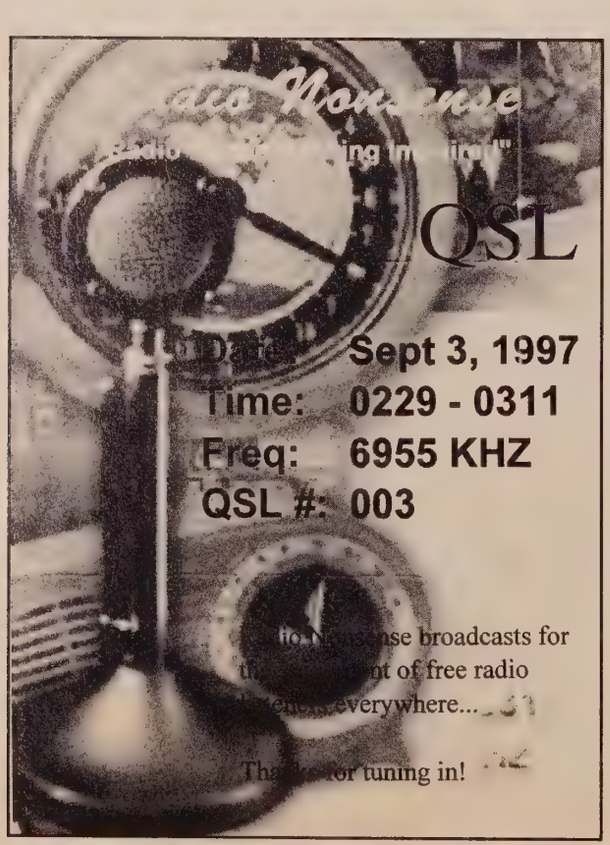
WREC, 6955 U at 1816 with fake commercials. They announced an e-mail address of <WREC@aol.com>. (Burgess, MA) 1738 with a live broadcast before a Betty Boop repeat. Also at 0218 in USB with equipment test, and again at 0403 to 0435. (Silvi, OH)

Radio Metallica, 6955 at 1930 with a discussion about Jade and music. (Silvi, OH) **6952** at 1540 with rock, themes from "Secret Agent," "Dragnet," "Hawaii Five-O." Gave Blue Ridge address. Off suddenly at 1549. Also at 0022 on **6955** with rock, funny ads for "ER" and the "CBS Evening News" and on **6953** at 1530. (Jeffery, NY)

R and R Confidential Monthly, 6955 at 1736 with news and views about rock and roll and music clips. (Silvi, OH)

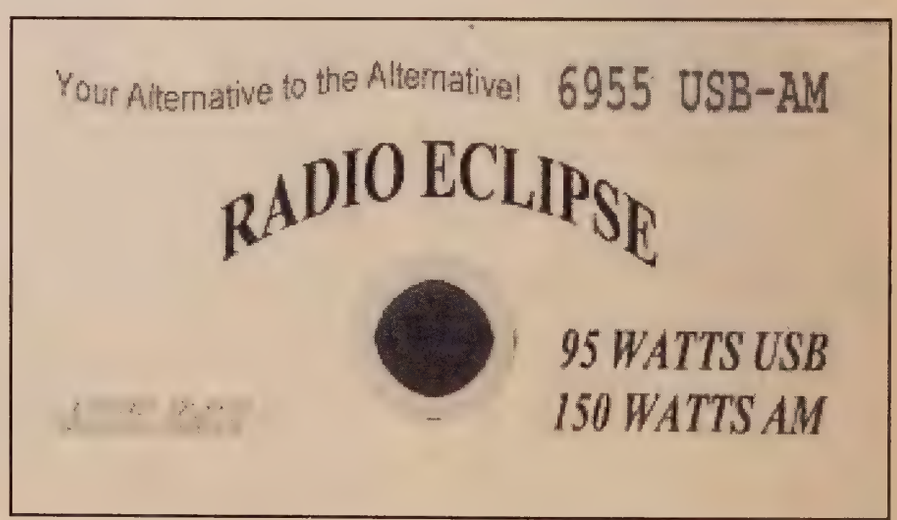
Voice of Stupidity, 6958 (best in lower sideband) at 2025 with "ooop de doo" music, slamming Michael Bolton and saying they were playing "stupid music." (Coatsworth, ON)

WKND, 6954.9 heard at 1711 sign on with a laughter interval signal. (Coatsworth, ON)



This nicely designed Radio Nonsense QSL was received by William Flagel in Michigan. The station "even-numbers" their QSLs.

Radio Eclipse is "Your Alternative to the Alternative."



Great White North Program 6955 U at 0057. Played three or four songs and then said "... welcome to the Great White North show on pirate radio." (Silvi, OH)

Radio Florida, 6955 U with test and QSO at 0116. (Silvi, OH)

Radio Nonsense, 6955 U at 0125. Also found at 0137 with commercial for Dylan and P. Abdul, Reason 356, Popeye. Also at 0232 with "White Room" by Cream. (Silvi, OH)

Anteater Radio, 6955 U at 1909 with music, IDs. The announcer said he was at a stop waiting to be unloaded. Later he tried a QSO with WSSR. Also at 1840 and 1523 (Silvi, OH)

S-9 Radio, 6955 U at 0042 with rock and rap. The DJs had electronically altered voices and the audio was muffled. (Hassig, IL)

Radio Freedom, 6950 at 1735 with a test broadcast. They played new rock tunes by Ever Clear and old songs by the Knack. Off at 1749 without giving and address. (Christopher White, MA)

Voice of Communism, 6955 at 1700 with TV show themes as part of a talk intended to show the differences between America and the Soviet Union, American lifestyles and an on-going comedy sketch about Soviet lifestyles. Off at 1800 with no address given. (Jeffery, NY)

Voice of Anarchy, 6955 at 2300 with music by Eddie Leonard, Daniel Abney, and Billy Z. Repeated a day later at 0300. (Hassig, IL) 2342 featuring music by Daniel Abney and others. (Silvi, OH)

WPUP (Puppies Using Pot) — "Puppy Radio, Incorporated," on **6850 U** (*Time? —Editor*) with Dr. Pupato and a spoof of "Jeopardy," Cheech and Chong playing dogs "Ralph and Herbie" and fake commercial for Bob Dylan's nasal spray for singers. (Burgess, MA)

WSSR, 6955 U at 1346 with songs and mention of the Belfast address. Also at 1618 and tentatively at 2120 closing with a song, their Web site address and a wish for good DXing. (Silvi, OH)

Take It Easy Radio, 6955 U at 2338 with music by the Eagles and Fleetwood Mac, Clinton put-downs. (Silvi, OH)

Mystery Radio, 6955 U at 0338 with a test of the "Mystery Radio broadcast system." Also at 1138 with music and sign off and 1149 with a flashback program and maybe them at 0342. (Silvi, OH)

Radio Fusion Radio, 6955 U at 1840 with Rap, Macarena, and nasty phone calls. Also at 2100 with QRM from a heckler. (Hassig, IL) 1812 with Macarena, usual format and IDs. Also at 2051 (Silvi, OH)

Solid Rock Radio, 6955 U at 1526 with "Gold Mine" program and Box 452 mail drop. (Silvi, OH)

Radio Tornado Worldwide, (presumed) **6955 U** at 1700 with Radio Metallica clips. (Silvi, OH)

Voice of Peace, 6955 U at 1656 with church-like music and what may have been a sermon. (Silvi, OH)

Pirate Radio Boston, 6955 at 2000 with listener letters, ID, rock, greetings to other pirates. Stoneham address. Off at 2011. (Jeffery, NY)

Partial India Radio, 6955 U at 0138 with mention of secular humanism, Popeye, Jerry Garcia, others. (Silvi, OH)

DC Radio (tentative) **6955 U** at 0019 with Morse code. (Silvi, OH)

Another great collection of logs! Keep 'em coming! (I could use some QSL copies and pirate station photos, too!) See you next month! ■

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Clandestine Communique

(from page 75)

The Voice of Sudan, which opposes the current Sudanese government, is still active on **8000,** or a small fraction below, and often heard in Arabic around 0400.

The Voice of Tibet is currently scheduled on **11570** from approximately 1220 to 1255 closing. A new segment from 2230 to 2300 on **7120** may also be in operation now. The broadcast is being jammed by the Chinese. The Voice of Tibet is broadcast via a transmitter at Dushambe in Tajikstan.

"The always fascinating transmissions of the New Star Broadcasting Station continue to be heard now and then."

The always fascinating transmissions of the New Star Broadcasting Station continue to be heard now and then. **8300** continues to be the most likely frequency. Try in the 1200 to 1500 time period. The broadcasts usually start on the hour but only run for 20 minutes or so.

VORGAN, the station of Angola's UNITA party. is now using this schedule: from 0430 to 0900 on **7090**, 1050 to 1430 on **9770**, and again 1650 to 2100 on **5985**. North American clandestine hunters are most likely to hear the station during its 0430 broadcast. Although the station airs some English, nearly all the broadcasts are in Portuguese.

The Democratic Voice of Burma airs twice daily in the Burmese, Shan, Karen, and Kayan languages. Check **15330** (via Germany) at 1245 to 1345 and **11850** (via Norway) from 1430 to 1455. QSL cards for this broadcast are issued in response to reception reports sent to: Democratic Voice of Burma, P.O. Box 6720, St., Olavs Plass, 0130 Oslo, Norway.

The Voice of Free Tajikistan is operating on **5960** and **7100** from 0230 to 0300 and 0530 to 0730.

Svobodnaya Georgia (Free Georgia) operates on **7050** in the Georgian language. Unfortunately, we don't have a schedule for this one at present.

That covers things for this time. Please know that your informational input is always welcome. We're interested in anything related to the subject of clandestine radio broadcasting — station schedules, locations, addresses (Web and otherwise!), QSL information, background info on the groups which run stations, and, certainly, your loggings.

Thanks for your continued interest and support, and we'll see you next month!

Until then, good hunting! ■

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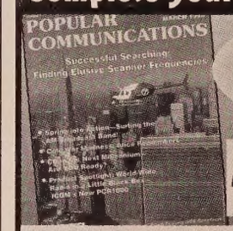

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The Loose Connection

BY BILL PRICE, N3AVY

RADIO COMMUNICATIONS HUMOR

The Bradley Boys Return

It's been a while since I told a tale of the Bradley Boys and their radio adventures. Long-term readers remember Dave (his real name) and Dan (his pseudonymical older brother who went on to have a normal life and wishes his privacy) and their exploits into electricity during their younger days.

I had lunch with Dave this afternoon, and he asked me if I'd ever built a "Foxhole Radio." I said that I hadn't, but the term seemed to be one I'd heard in the past. He confirmed what I'd heard, and told me that it was a crystal radio, but didn't use a crystal; instead it used a rusty razor blade in place of the galena crystal (or the 1N34 diode we use today). He confided that he had always wanted to build one, even though he'd had numerous commercial crystal radio kits — some with classic cat's whisker adjustments.

By the time he found out about Foxhole Radios, the war was long over. Dave's older brother had begun shaving when Dave began his search for a rusty razor blade, but, alas, Dan had been using stainless steel blades, chrome-plated blades, and even platinum-plated blades — none of which would rust. He spied the slot in the back of the medicine cabinet, through which he assumed that years' worth of razor blades had been dropped, and figured that if there were multi-tube radios, he'd build a multi-rusty-razor blade radio and have reception for his neighbors to envy.

Dave didn't have much trouble unscrewing the medicine cabinet from the wall, but he couldn't reach down through the small hole the builders cut behind the medicine cabinet to get the old, rusty blades. Looking back, he says, it's just as well, because his mother would warn him at least once a day back then that if he cut himself on anything rusty, he'd end up with lockjaw if he didn't get a tetanus shot.

Dave figured that if he made the hole bigger, it wouldn't matter much because it would be hidden by the medicine cabinet. A 10-year-old can't be counted on to plan carefully and use logical thought to guide his every move. Eventually, the hole was enlarged to just a half-inch less than the size of the medicine cabinet — in both directions — and mom would be home in half an hour.

Dan rescued the young Bradley as he had often done — this time with a can of contact cement which he used to carefully replace the medicine cabinet, completely covering the hole. He asked why Dave hadn't used a magnet on a string to retrieve some of the old razor blades. Dave thought it was a swell idea and wished he'd thought of it while there was still a gaping hole in the wall.

Dan wouldn't use blue blades — said they hurt his face too much — so Dave bought a pack anyway, and left one lying on the bathroom sink in a small intentional puddle of water to rust. Next day it was gone. He put out another that night. Next day that one was gone, too. When he asked his mother if she'd seen it, she said, "Of course I've seen it. I threw one away each night for the past two nights. They'll get rusty and cut someone — give them lockjaw if they don't get a tetanus shot." She had put them down the slot in the back of the cabinet.

Dave finally rusted some razor blades in the back yard, but by now he was on his way through the Cub Scout handbook, which showed him how to make his own capacitor using squares of aluminum foil and waxed paper in alternating layers. He eventually got the razor blade connected into the circuit and added the Cub Scout capacitor, but the circuit never worked. Dave was annoyed when Dan had fastened a .5-mfd electrolytic capacitor across his foil and waxed-paper version, but the thing did work for the first time. Dave later experimented with Hershey's Kiss wrappers alternated between Mary Jane wrappers, but never successfully made his own capacitor.

Dave tells me that since I saw him last, he's gotten a new Pug dog — this one named Buster. I asked if this one had a liking for sauerkraut like the original Bradley Pug, "Flatto." He said that Buster had indeed gotten a little taste of sauerkraut once, and he liked it quite well, but Dave and the kids are not taking any chances with Buster becoming addicted to sauerkraut, pickled eggs, or any of the "pull-my-finger" foods that have always appealed to men and annoyed the women in their lives.

Dave's doing well for himself, what with the voiceover business and his collection of famous "air-check" tapes. He's now refining a new tack-welding method of splicing the wires on his Webcor Wire Recorder — a vast improvement over the "tie a knot" method recommended by the manufacturer back before magnetic tape.

He said since I'd reminded him of the foxhole radios, now he's thinking about picking up a few rustable blades and trying again — but this time with his own homemade capacitor. By the time he gets that far, brother Dan will probably read this and sneak into his house with a .5-mfd 'lytic just to foil his plans. I asked Dave about this, but he's not worried. He says Buster's trained to sniff out a commercially produced capacitor at 20 paces, brother or no brother, so watch it, Dan.

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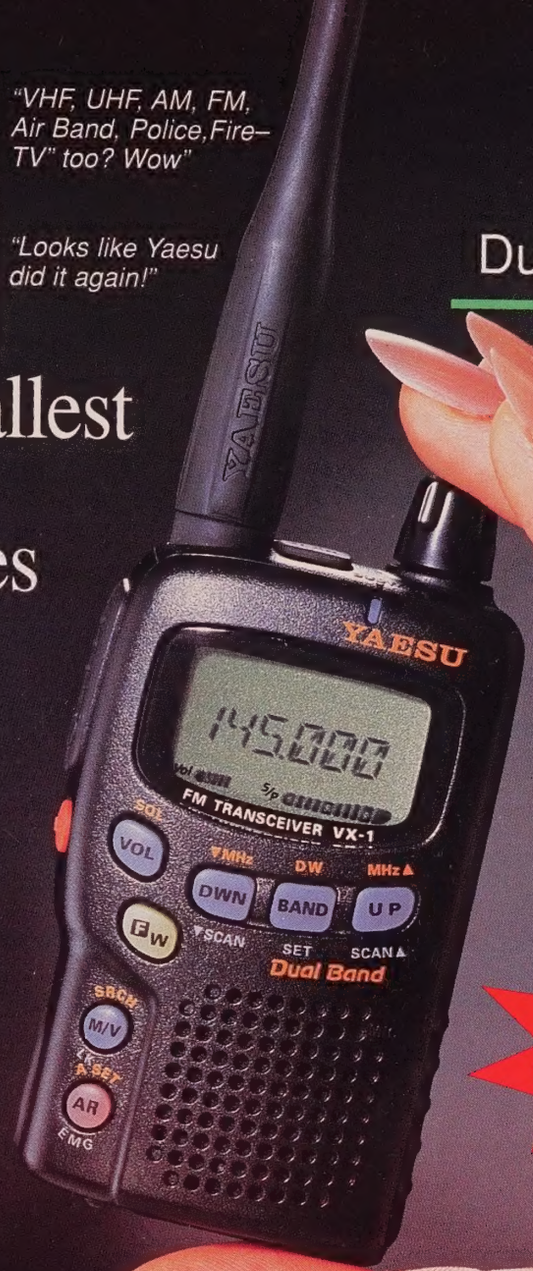

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Auto Sweep Time	<1 second
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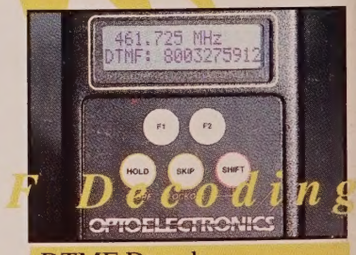
Display	2 line LCD
Power	Internal NiCad

CTCSS Decode

DCS Decode



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